

ENGINEERING DRAWINGS
ENGINEERING DRAWINGS
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ENGINEERING DRAWINGS

FPII-A
**Field Maintenance
Print Set**

**Digital Equipment
Corporation**

PRINT SET ORDER NO.
MP00189

digital



N 82 S 123 N 7827
S 7906 158A1

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FIELD MAINTENANCE PRINT SET

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A-PL-FP11-A-Ø	FLOATING POINT OPTION (PL)
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D-CS-5412416-Ø-1	BOARD INTERCONNECT 2Ø Pin (CS)
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UNIT VARIATIONS
COVERED BY THIS
PRINT SET

FP11-A

FPII-A
Field Maintenance
Print Set

Digital Equipment Corporation

PRINT SET ORDER NO.
MP00189

EN01132A.16.N67E (2/2)

REVISIONS					USED ON OPTION/MODEL		DRN.	DATE	<div>digital</div> <div>TITLE: FLOATING POINT OPTION</div>									
DATE	CHG. NO.	REV.																
7-77	FP11-A-1	A			1134A		D. HEALY	OCT 76										
5-78	FP11-A-3	B					CHK'D	DATE										
							D. HEALY	OCT 76										
							PROJ. ENG.	DATE										
							FIELD SERV.	DATE										
					SHEET 1 OF 1													

DRAWING DIRECTORY

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CUSTOMER PRINT SET INDEX

SEQUENCE

SEQUENCE

THIS IS PRINT SET

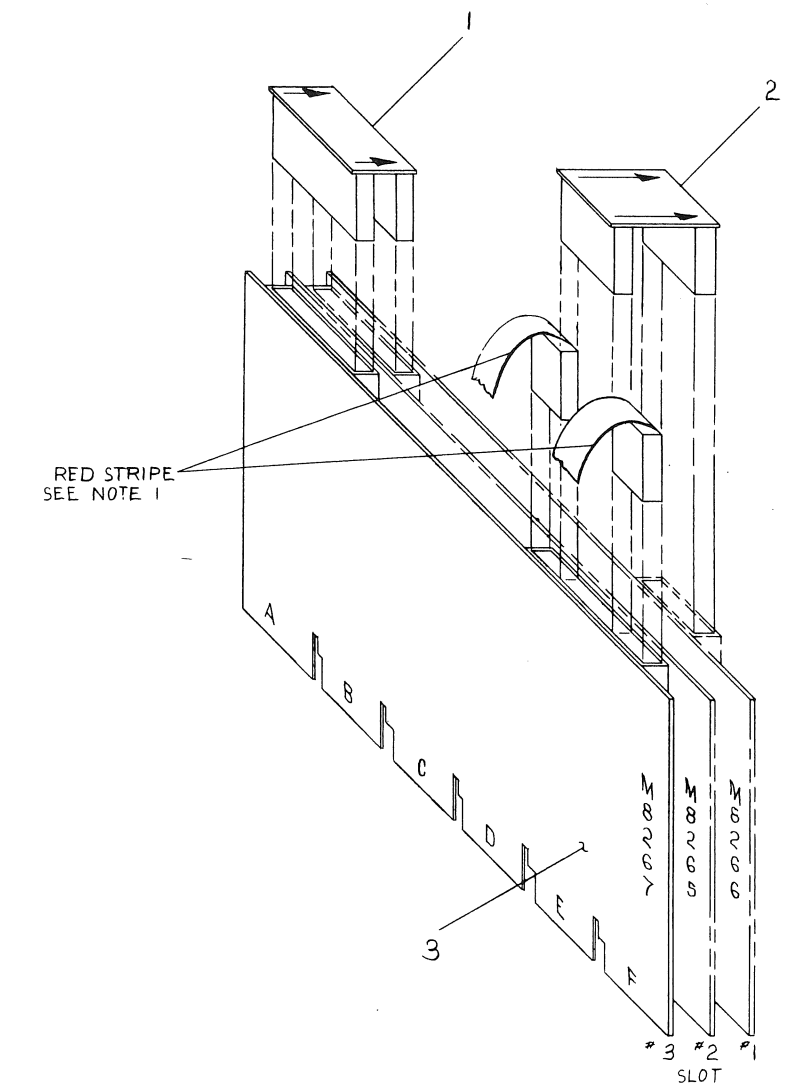
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[illegible]

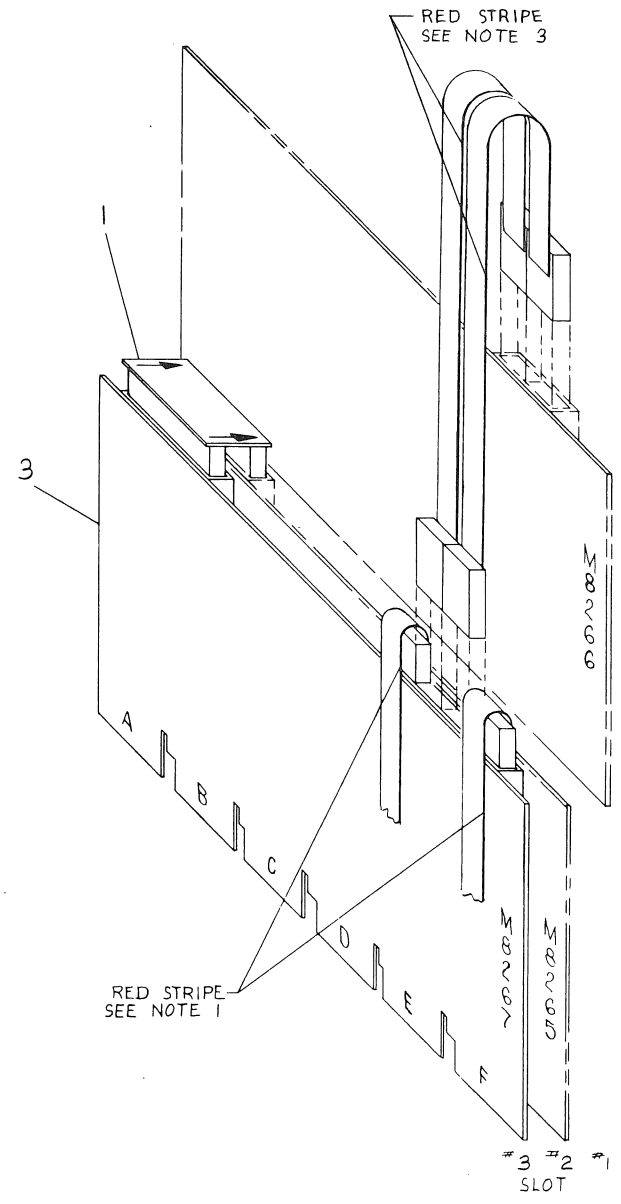
REVISIONS			USED ON OPTION/MODEL		DRN.	DATE	TITLE									
DATE	CHG. NO.	REV			D. HEALY	OCT 76	FLOATING POINT OPTION									
7-77	FP11-A-1	A		1134A	CHK'D.	DATE										
9-77	FP11-A-2	B			D. HEALY	OCT 76										
5-78	FP11-A-3	C			PROJ ENG.	DATE										
					<i>JW Mitchell</i>	<i>12-20-76</i>										
					PROD.	DATE	SIZE	CODE	NUMBER					REV		
					<i>W. L. L.</i>	<i>12-21-76</i>	B	DD	FP11-A					C		
					PROD. ENGR.	DATE	DIST									
			SHEET	1	OF	2										

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- NOTES:
1. THESE CABLES #7011411-ID ARE PART OF KY11-LB OPTION AND MAY NOT BE PRESENT IN SOME CONFIGURATIONS.
 2. THE W9042 EXTENDER BD. ASSY. IS STORED IN THE BACKPLANE AND IS USED FOR SOME MAINTENANCE OPERATIONS.
 3. THESE CABLES ARE INSTALLED DURING MAINTENANCE ONLY, AND ARE CLIPPED TO THE W9042 FOR STORAGE. THESE CABLES #7011411-ID ARE PART OF W9042.
 4. MODULES MB265 & MB266 ARE PART OF KD11-EA & SHOWN FOR REF ONLY.



CONFIGURATION "A"

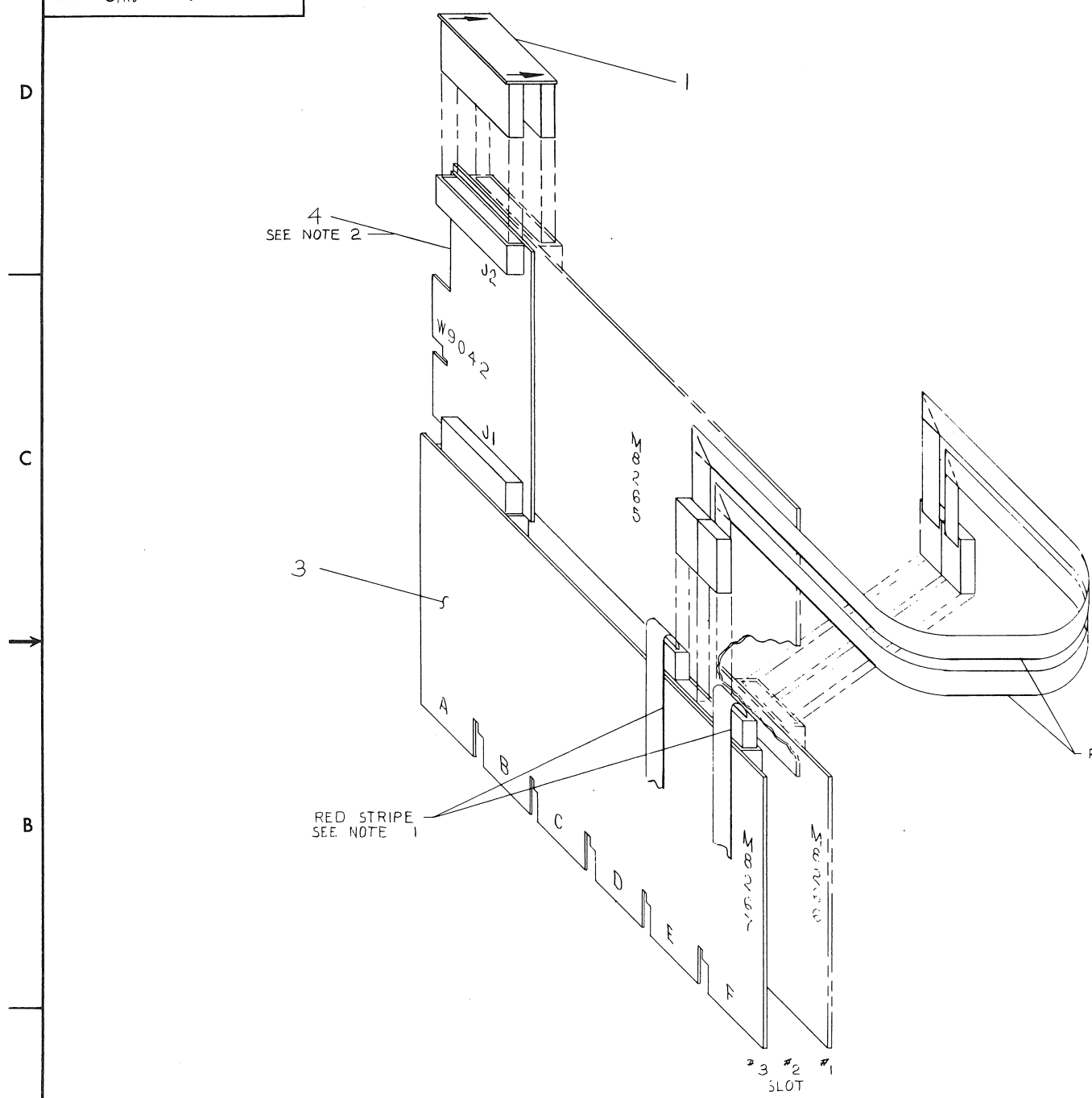


CONFIGURATION "B"

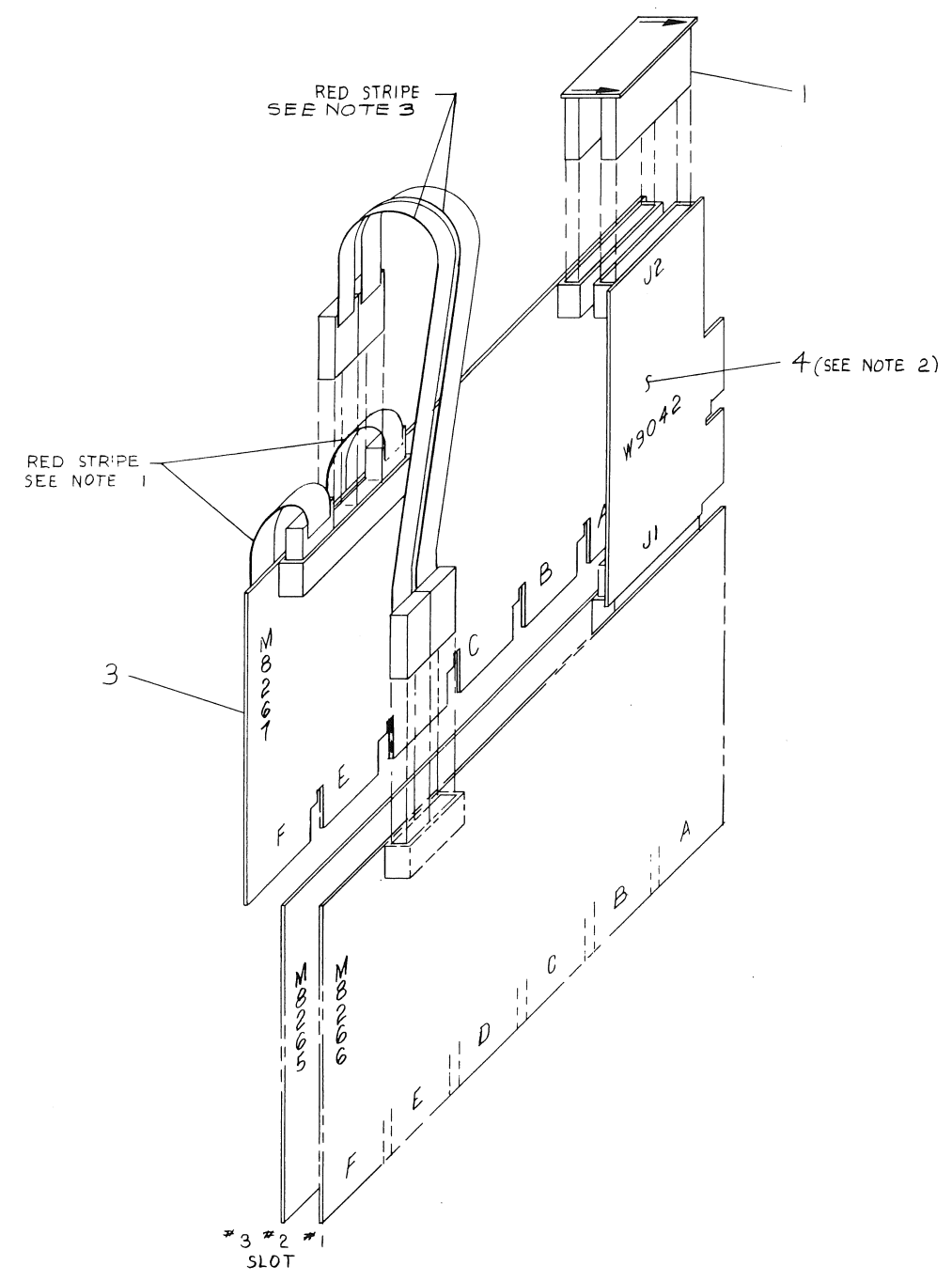
1	EXTENDER BD. ASSY.	D-UA-W9042-0-0	4
1	FLOATING POINT (FPII-A)	D-UA-M8267-0-0	3
1	BOARD, INTERCONN 20 PIN	D-UA-5412416-0-0	2
1	BOARD, INTERCONN 40 PIN	D-UA-H8821-0-0	1

DESCRIPTION		DWG./PART NO.		ITEM NO.			
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES							
ANGLES ±0° 30'		NOMINAL DIMENSION RANGE INCHES					
SURFACE QUALITY IN	CLASS OF ACCURACY (CHECK ONE)	OVER 0 TO 0.2	OVER 0.2 TO 1.2	OVER 1.2 TO 12.0	OVER 12.0 TO 40.0		
		±.004	±.008	±.012	±.016	±.024	±.04
MICROINCHES	PREFERRED	±.012	±.016	±.025	±.04	±.063	±.1
		QUANTITY & VARIATION					
DRN. <i>B.B. [signature]</i> 11 OCT 76		FIRST USED ON 1134		digital			
CHK'D. <i>D. [signature]</i> 29 OCT 76		TITLE FLOATING POINT OPTION					
ENG. <i>[signature]</i> 16 DEC 76		SIZE CODE NUMBER REV.					
PROJ. ENG. <i>[signature]</i> 26 DEC 76		D UA		FPII-A-0			
PROD. <i>[signature]</i> 11 DEC 76		SHEET 1 OF 2					

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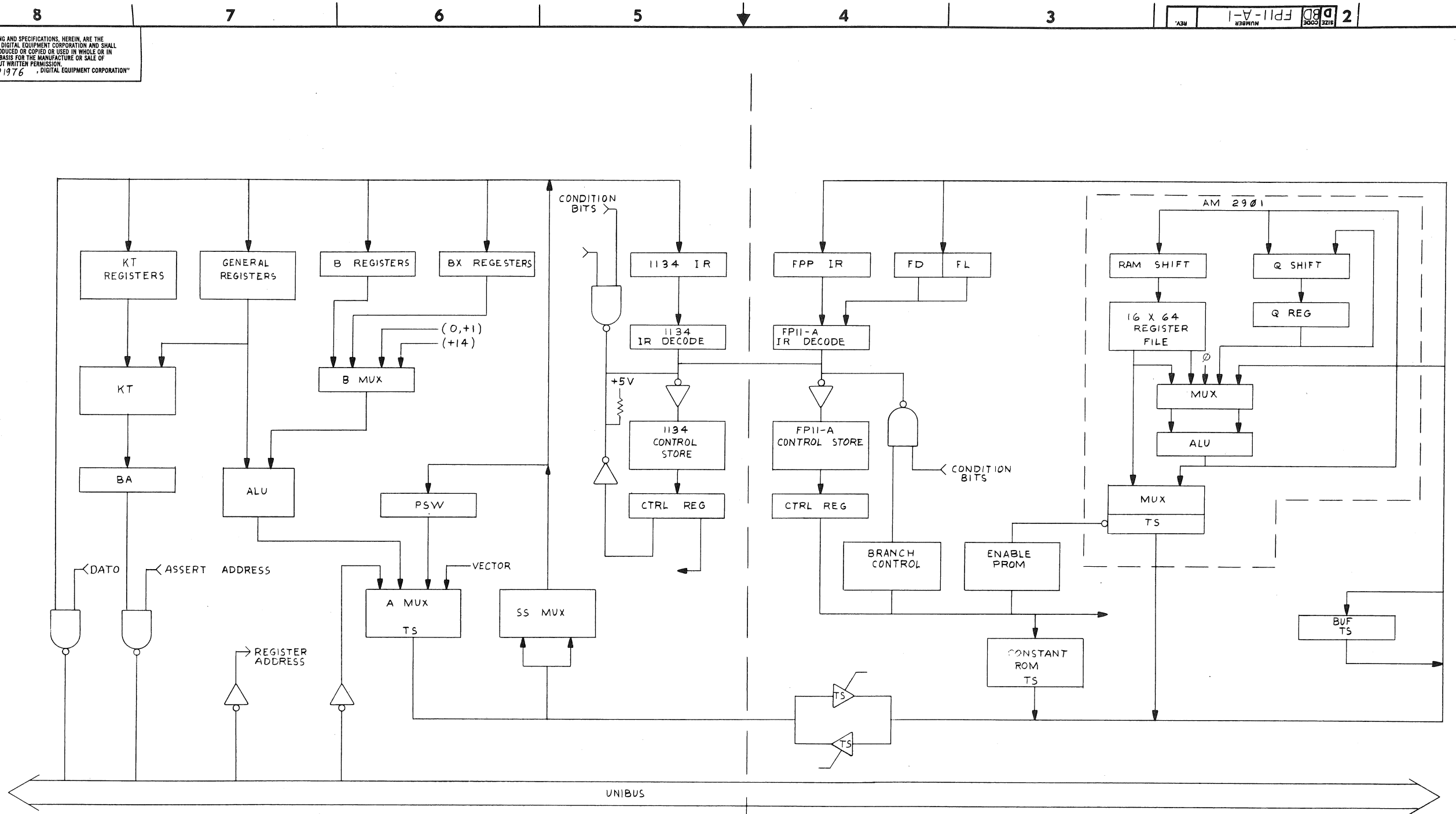
CONFIGURATION "C"



CONFIGURATION "D"

REVISIONS		
CHK	CHANGE NO.	REV.

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1134A PROCESSOR

FPII-A FLOATING POINT OPTION

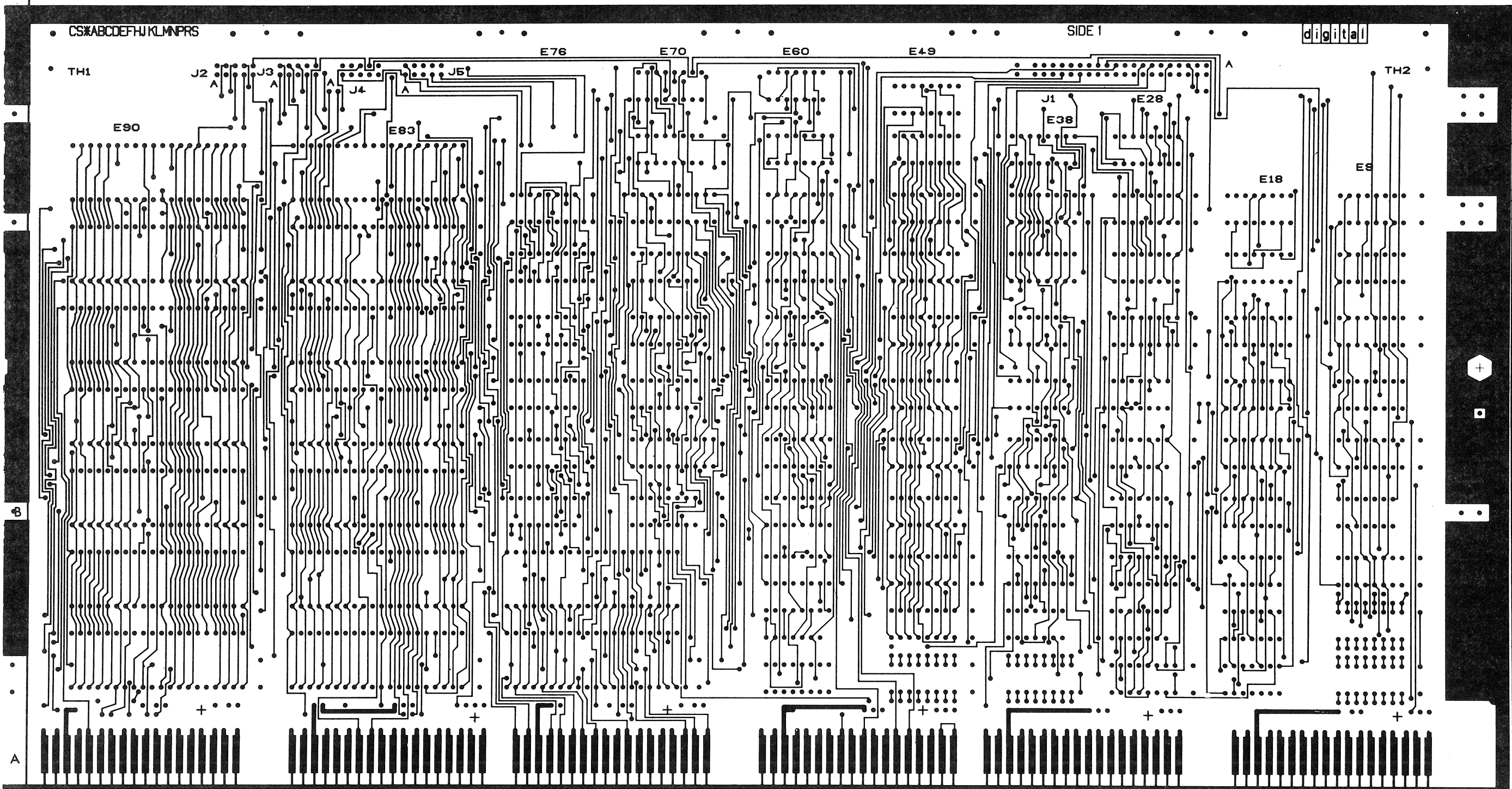
REV.	CHG.	NO.
1		

DRN. B. Blodgett	Mod 76	FIRST USED ON	1134A digital
CHK'D. J. Blodgett	20 DEC 76	TITLE	1134 FLOATING POINT PROCESSOR FPII-A
ENG. J. Blodgett	20 DEC 76	PROJ. ENG.	
PROD. J. Blodgett		NEXT HIGHER ASSY.	
B-DD-FPII-A		SIZE CODE	NUMBER
SCALE		D BD	FPII-A-1
SHEET 1 OF 1		DIST.	

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LAYER 1



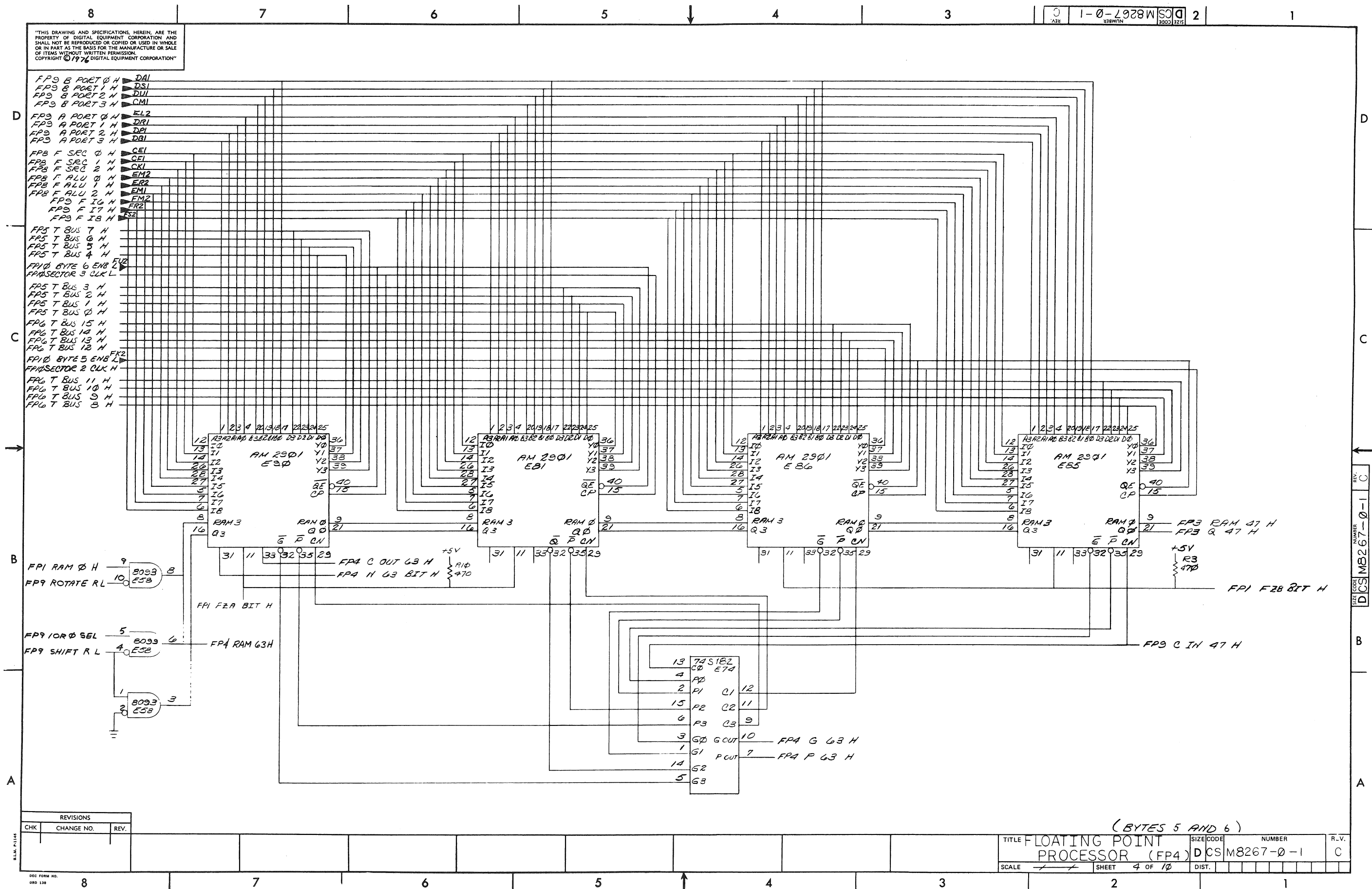
REVISIONS		
CHK	CHANGE NO.	REV.

TITLE	11/34 FLOATING PT. OPTION	SIZE/CODE	NUMBER	REV.
SCALE	2/1	SHEET	2 OF 3	DIST.
		D UA M8267-0-0		C

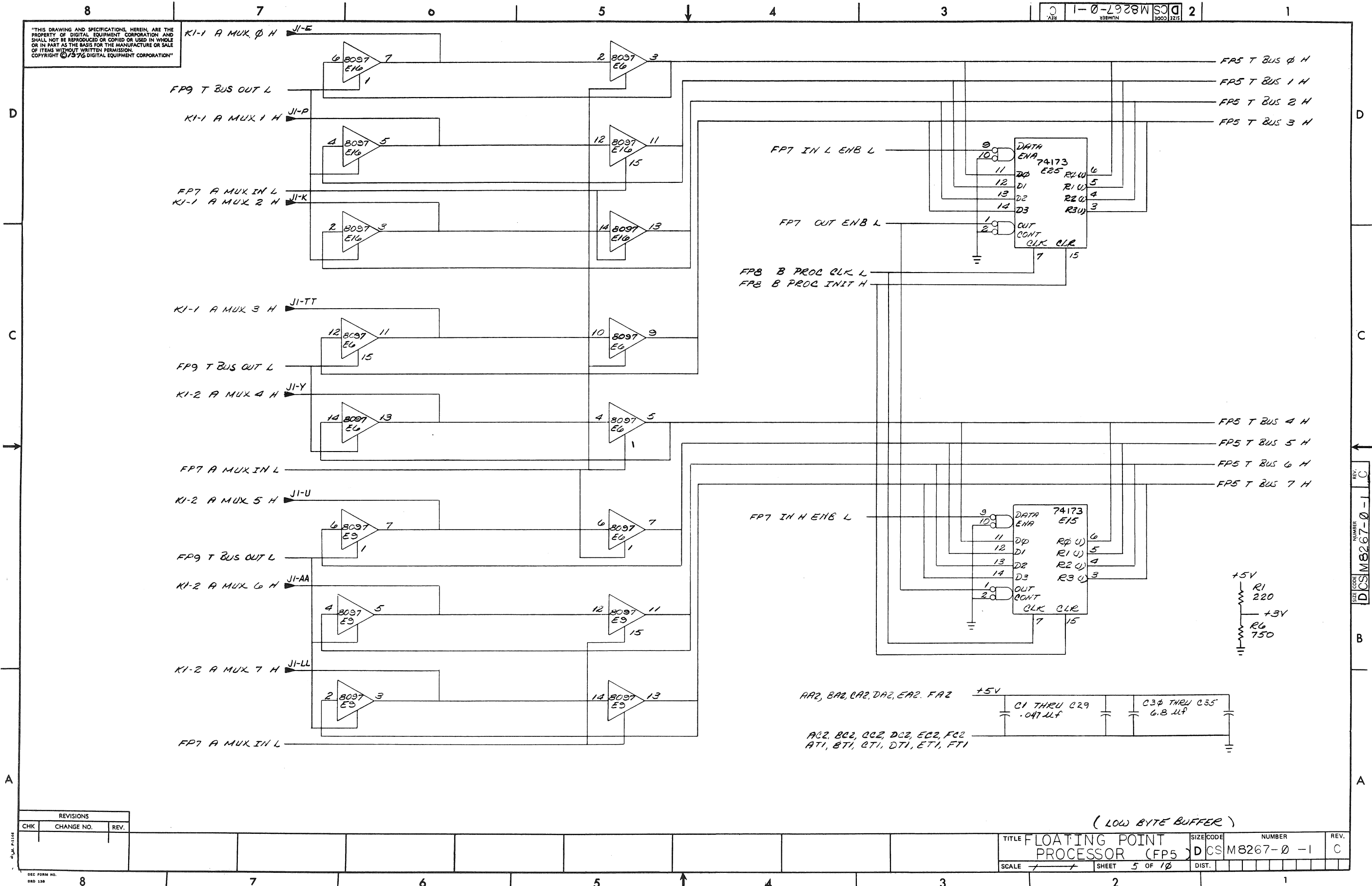
DIGITAL EQUIPMENT CORPORATION PARTS LIST				QUANTITY / VARIATION										NOTES:				
MADE BY D. J. SIREEN DATE 12 JULY 76		CHECKED F. SEIDMAN DATE 18 AUG 76		SECTION		M8267-0-0												
ENG <i>m. Sullivan</i> DATE 7/18/77		PROD R. B. KING DATE 15 JUL 77		ISSUED SECTION														
ITEM NO.	DRAWING NO.	PART NO.	DESCRIPTION		REF DESIGNATION													
1	D-MD-5012435-0-0	5012435	ETCHED BOARD		1													C30 thru C35 C1 thru C29 J1 J2 thru J5 (ONE CONNECTOR) R1 R7, R8 R2, R3, R9, R10, R4 R11 R6 E11, E20, E23 E32 E33 E22, E60 E35, E34 E30 E10 E13 E59, E69 E70 E27, E31, E28, E49, E52, E53, E57, E65, E67
2		1005306	CAPACITOR, 6.8 uf, 35V, 10% TANT		6													
3		1012784	CAPACITOR, .047 uf 50V, CER		29													
4		1213506-01	RT. ANGLE HEADER 40 POS.		1													
5		1213506-02	RT. ANGLE HEADER 52 POS.		1													
6																		
7		1300271	RESISTOR, 220, 1/4W, 5%		1													
8		1300295	RESISTOR, 330, 1/4W, 5%		2													
9		1300316	RESISTOR, 470, 1/4W, 5%		5													
10		1300229	RESISTOR, 100, 1/4W, 5%		1													
11		1301401	RESISTOR, 750, 1/4W, 5%		1													
12		1910533	I.C. DEC 74S03		4													
13		1910535	I.C. DEC 74S05		1													
14		1910532	I.C. DEC 74S00		2													
15		1910534	I.C. DEC 74S04		2													
16		1910536	I.C. DEC 74S10		1													
17		1910539	I.C. DEC 74S20		1													
18		1910544	I.C. DEC 74S74		1													
19		1910547	I.C. DEC 74S153		2													
20		1910548	I.C. DEC 74S157		1													
21		1910550	I.C. DEC 74S174		9													
E.C.O. NO.																		
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						SHEET 1 OF 3		INSERTION PARTS LIST DATA BASE REV										

DIGITAL EQUIPMENT CORPORATION PARTS LIST				QUANTITY / VARIATION												NOTES:					
MADE BY D. J. SIREEN DATE 12 JULY 76		CHECKED F. SEIDMAN DATE 18 AUG 76		SECTION		M8267-0-0															
ENG <i>m Sullivan</i> DATE 7/18/77		PROD R. B. KING DATE 15 JUL 77		ISSUED SECTION																	
ITEM NO.	DRAWING NO.	PART NO.	DESCRIPTION																REF DESIGNATION		
22		1910837	I.C. DEC 8093	3															E51 E56,E58		
23		1910957	I.C. DEC 74S175	2															E18,E26		
24		1911527	I.C. DEC 8097	6															E5 thru E9,E16		
25		1912097	I.C. DEC 74S182	6															E50,E63,E71 thru E74		
26		1912388	I.C. DEC 74S02	1															E24		
27		1912746	I.C. DEC 74S37	1															E12		
28		1911330	I.C. DEC 74173	4															E3,E14,E15,E25		
29		1913245	I.C. DEC AM 2901	16															E61 E62,E77 thru E90		
30		1911637	I.C. DEC 74132	1															E4		
31		1212385	40 PIN SOCKET	16															E61,E62 E77 thru E90		
32		1000015	CAPACITOR, 82 pf, 5%	1															C36		
33		7417214	HANDLE, MODIFIED	1																	
34			I.C. SPARES	4															E1,E2,E29,E39		
35		9000024-01	EYELET	9																	
36		23157A1	I.C. DEC PROM 32 x 8 T.S.	1															E17		
37		23153A1	I.C. DEC PROM 32 x 8 T.S.	1															E19		
38		23154A1	I.C. DEC PROM 32 x 8 T.S.	1															E21		
39		23155A1	I.C. DEC PROM 32 x 8 T.S.	1															E54		
40		23158A1	I.C. DEC PROM 32 x 8 T.S.	1															E55		
41		23156A1	I.C. DEC PROM 32 x 8 T.S.	1															E76		
42		23014F1	I.C. DEC PROM 1K x 4 O.C.	1															E64		
E.C.O. NC																					
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								SHEET 2 OF 3				INSERTION PARTS LIST DATA BASE REV									

DIGITAL EQUIPMENT CORPORATION PARTS LIST					QUANTITY / VARIATION												NOTES:		
MADE BY DATE		CHECKED DATE		SECTION	M8267-Ø-Ø														
ENG DATE		PROD DATE		ISSUED SECTION															
D. J. SIREEN 12 JULY 76		F. SEIDMAN 18 AUG 76																	
<i>M. Sullivan</i> 7/18/77		R. R. KING 15 JUL 77																	
ITEM NO.	DRAWING NO.	PART NO.	DESCRIPTION																REF DESIGNATION
43		23Ø15F1	I.C. DEC PROM 1K x 4 O.C.	1															E66
44		23435A9	I.C. DEC PROM 512 x 4 T.S.	1															E45
45		23436A9	I.C. DEC PROM 512 x 4 T.S.	1															E44
46		23437A9	I.C. DEC PROM 512 x 4 T.S.	1															E43
47		23438A9	I.C. DEC PROM 512 x 4 T.S.	1															E38
48		23439A9	I.C. DEC PROM 512 x 4 T.S.	1															E42
49		2344ØA9	I.C. DEC PROM 512 x 4 T.S.	1															E41
50		23441A9	I.C. DEC PROM 512 x 4 T.S.	1														E40	
51		23442A9	I.C. DEC PROM 512 x 4 T.S.	1														E37	
52		23443A9	I.C. DEC PROM 512 x 4 T.S.	1														E36	
53		23444A9	I.C. DEC PROM 512 x 4 T.S.	1														E48	
54		23445A9	I.C. DEC PROM 512 x 4 T.S.	1														E47	
55		23446A9	I.C. DEC PROM 512 x 4 T.S.	1														E46	
56		23Ø1ØB1	I.C. DEC PROM 256 x 8 T.S.	1														E75	
57		23Ø11B1	I.C. DEC PROM 256 x 8 T.S.	1														E68	
58		1300365	RESISTOR, 1K, 1/4W, 5%	1														R5	
E.C.O. NO.																			
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						D-UA-M8267-Ø-Ø		B	PL	M8267-Ø-Ø		C							
						SHEET 3 OF 3		INSERTION PARTS LIST DATA BASE REV											



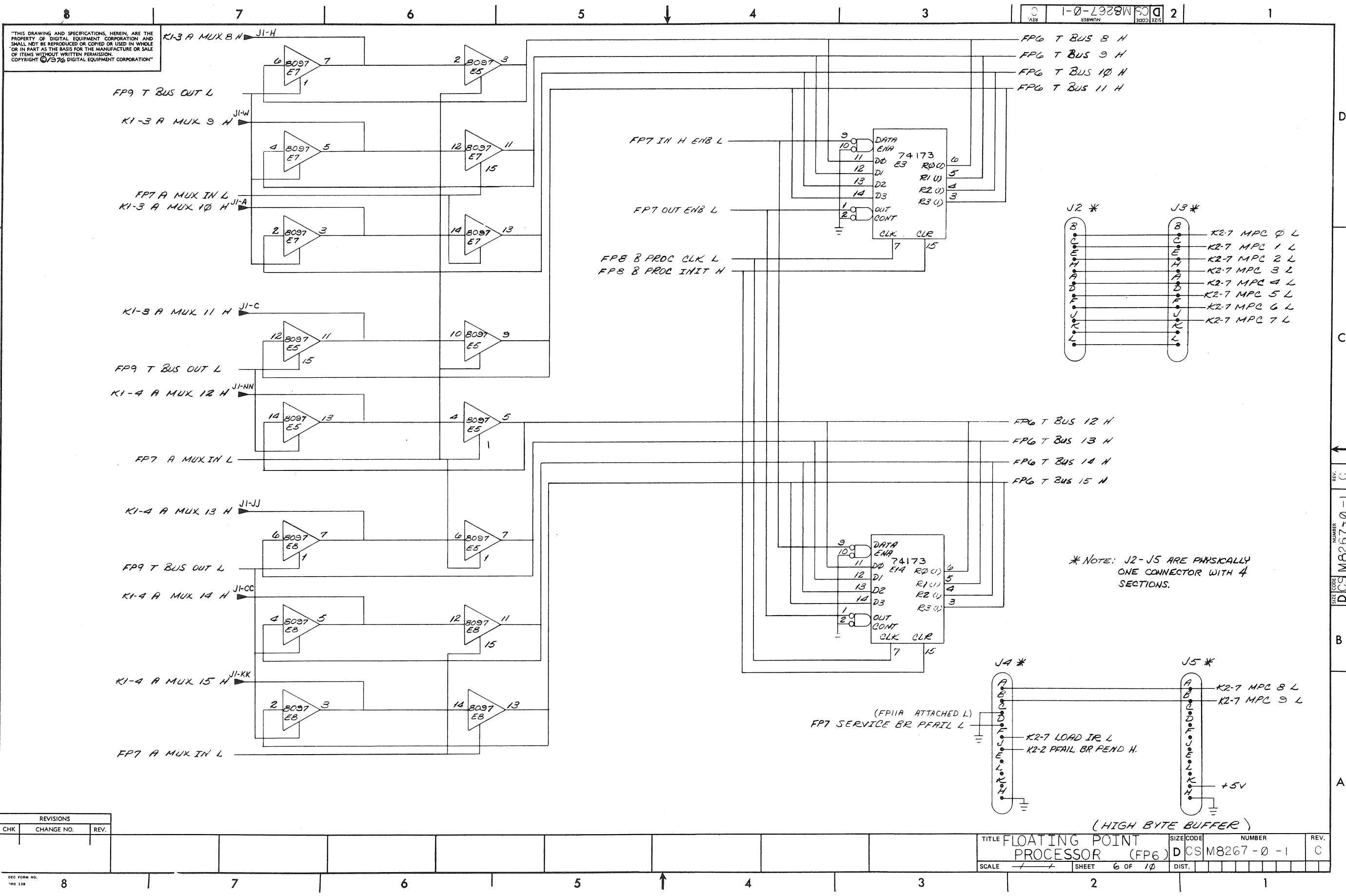
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REVISIONS		
CHK	CHANGE NO.	REV.

TITLE		DCS M8267-0-1	REV.	C
FLOATING POINT PROCESSOR (FP5)				
SCALE	1	SHEET	5 OF 10	
DIST.				

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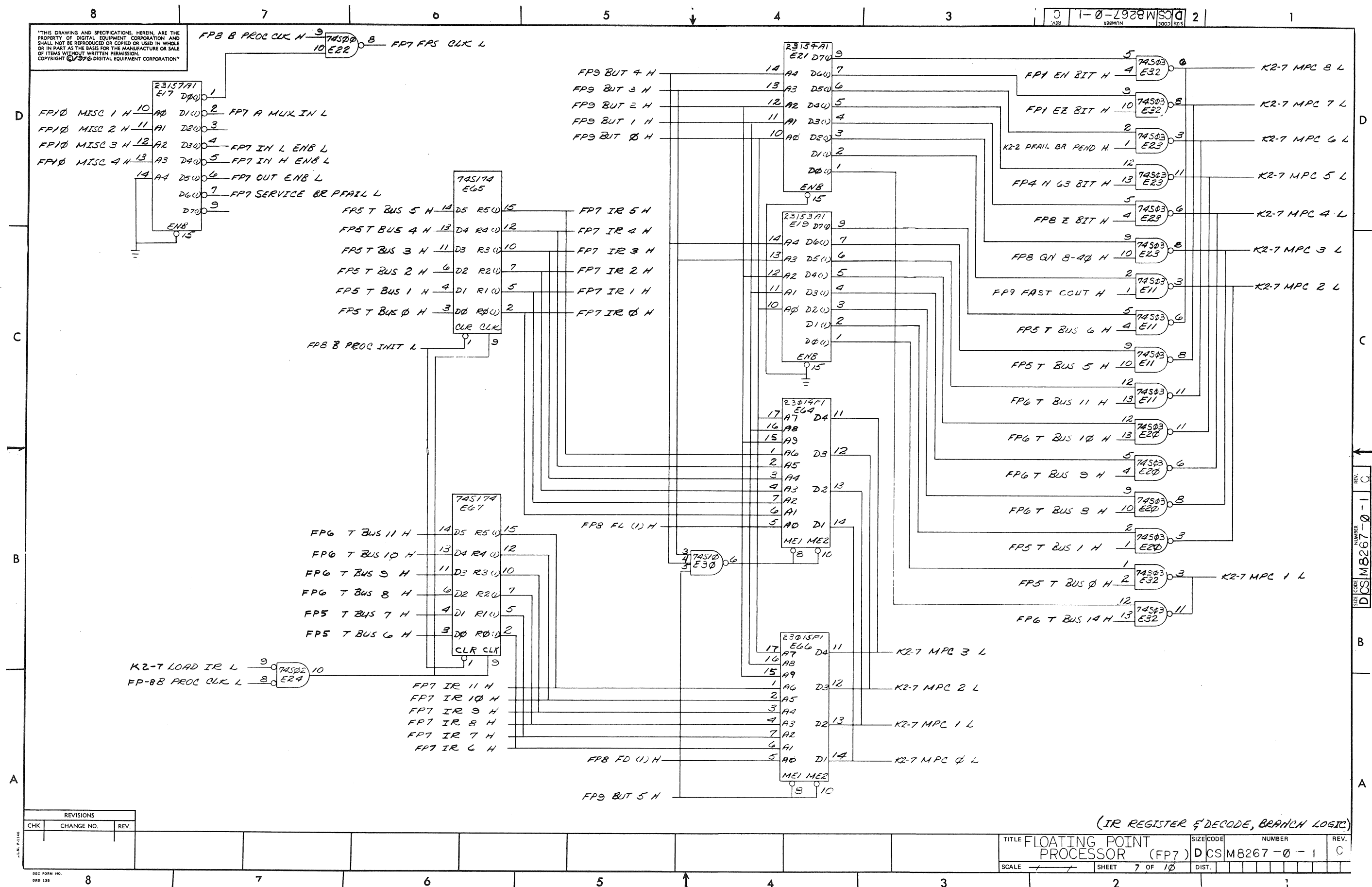


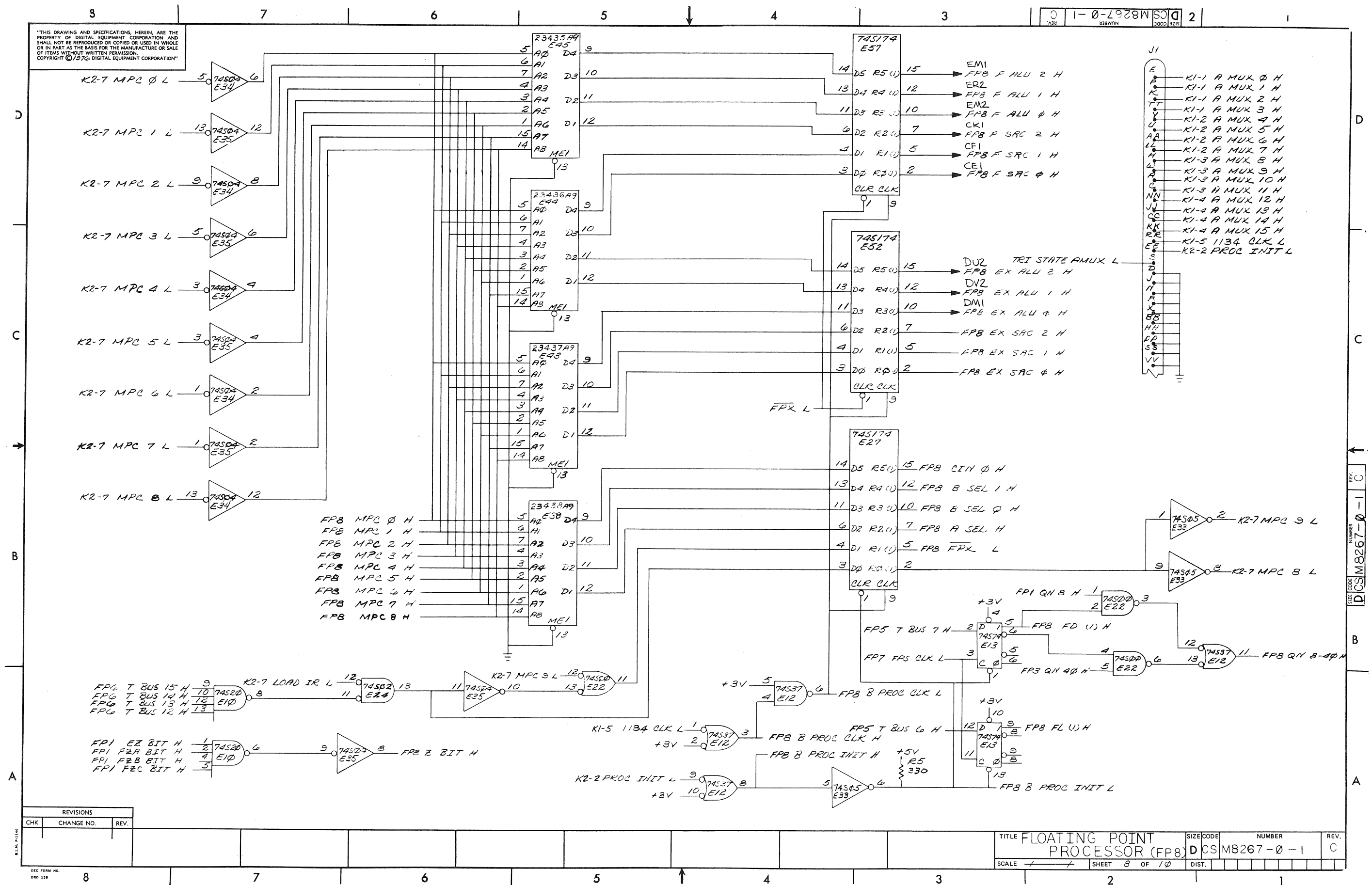
* NOTE: J2-J5 ARE PHYSICALLY ONE CONNECTOR WITH 4 SECTIONS.

(HIGH BYTE BUFFER)

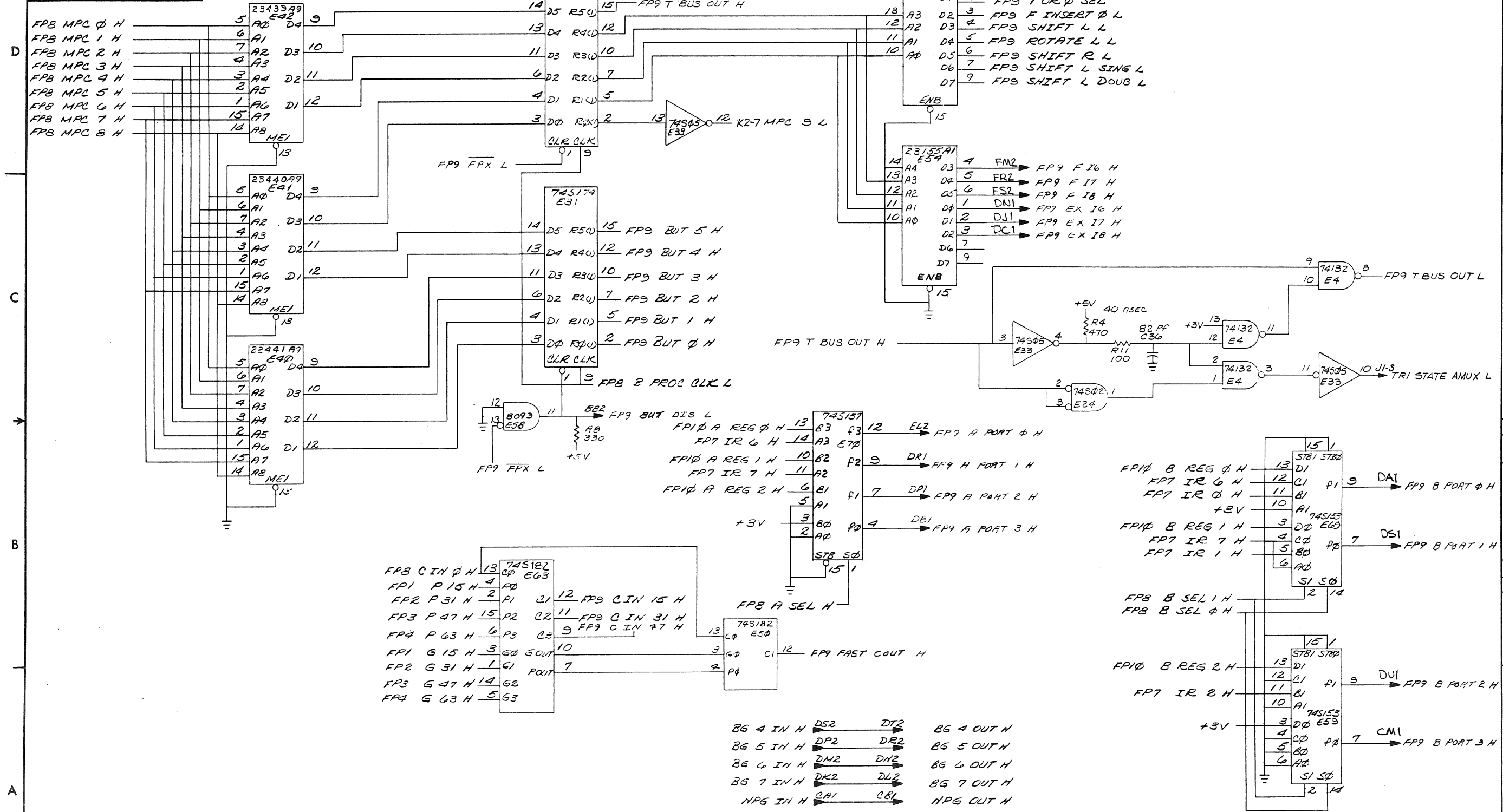
REVISIONS		
CHK	CHANGE NO.	REV.

TITLE		SIZE CODE	NUMBER	REV.
FLOATING POINT PROCESSOR (FP6)		D CS	M8267-0-1	C
SCALE	SHEET	DIST.		
	6 OF 10			





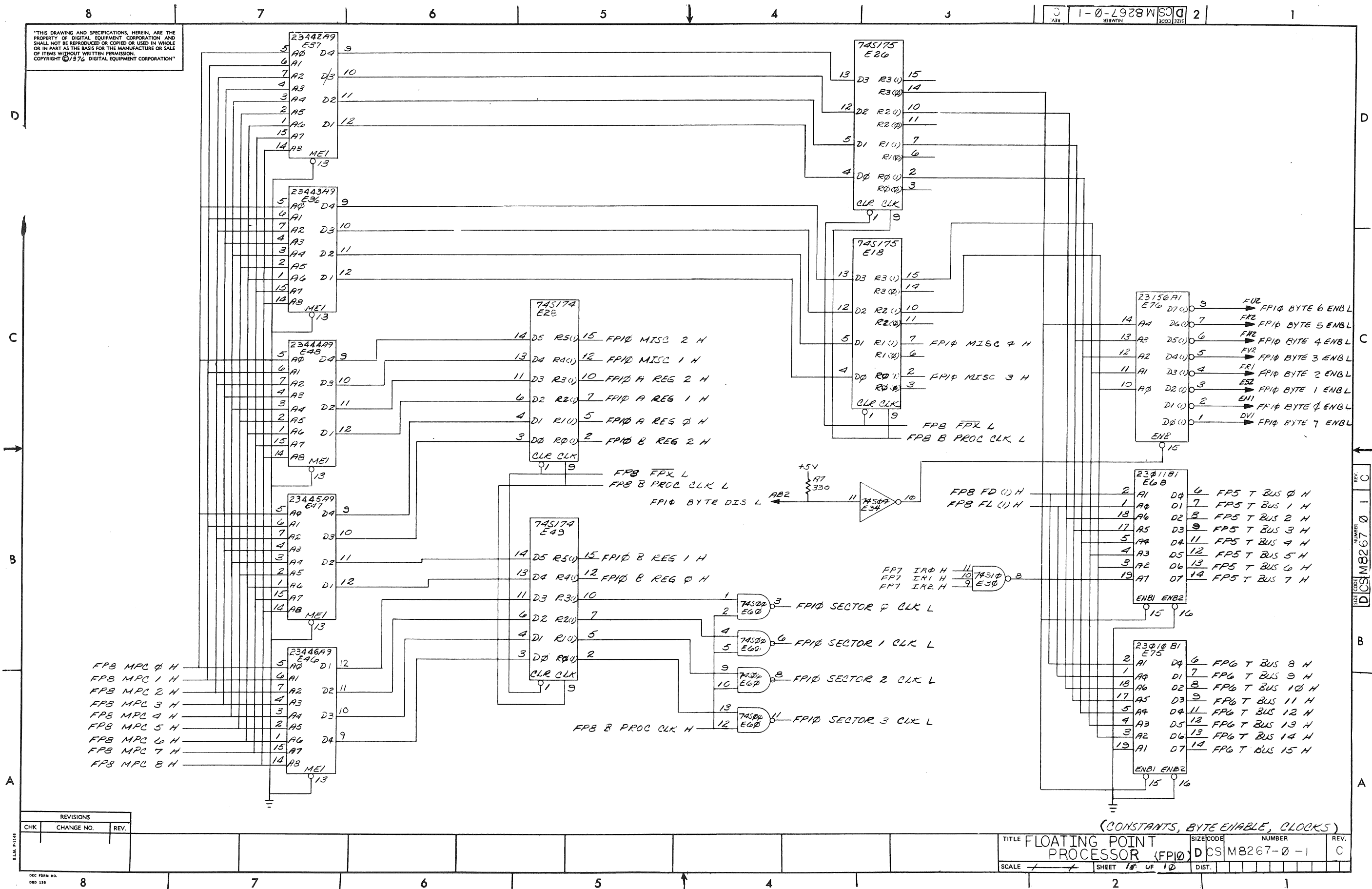
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REVISIONS		
CHK	CHANGE NO.	REV.

TITLE		SIZE	CODE	NUMBER	REV.
FLOATING POINT PROCESSOR (FP9)		D	CS	M8267-0-1	C
SCALE		SHEET	9 OF	10	DIST.

(A PORT MUX, B PORT MUX, BUT)



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ANY OTHER CRYSTAL DEFENSE PRODUCT.
CRYSTAL DEFENSE CORPORATION

NOTES

CHK	CHANGE	NO	REV
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ETCH REV. B
P.C. DESIGN DATA BASE REV. B

SIGNATURES		DATE	digital	
DRN. F MULLIGAN		10/27/76		
CHK'D. F SEIDMAN		12-3-76		
ENG. R Barry		3 DEC 76	TITLE 40 PIN	
PROJ. ENG. R Barry		3 DEC 76	INTERCONNECT BOARD	
PROD. R Barry		6 DEC 76		
SCALE 2/1			SIZE CODE	NUMBER
SHT. 1 OF 3			0 UA	H 8821-0-0
NEXT HIGHER ASSY. R-DD-H8821-0			REV	A

1 MS# 60955

8

7

6

5

4

3

1

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REV. A
Ø-Ø-1288H
2

D

C

B

A

D

C

B

A

LATCH

CS ABCDEF SIDE 1
H8821 5012414B

L1

CS ABCDEF SIDE 1
H8821 5012414B

L1

CS ABCDEF SIDE 1
H8821 5012414B

L1

CS ABCDEF SIDE 1
H8821 5012414B

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H8821 5012414B

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CS ABCDEF SIDE 1
H8821 5012414B

L1

CS ABCDEF SIDE 1
H8821 5012414B

L1

CS ABCDEF SIDE 1
H8821 5012414B

L1

REVISIONS		
CHK	CHANGE NO.	REV.

DEC FORM NO.
080 137

8

7

6

5

4

3

2

1

TITLE
40 PIN INTERCONNECT BOARD

SCALE 2/1

SHEET 2 OF 3

SIZE CODE
D UA

DIST.

NUMBER
H8821-Ø-Ø

REV. A

REV. A

Ø-Ø

NUMBER

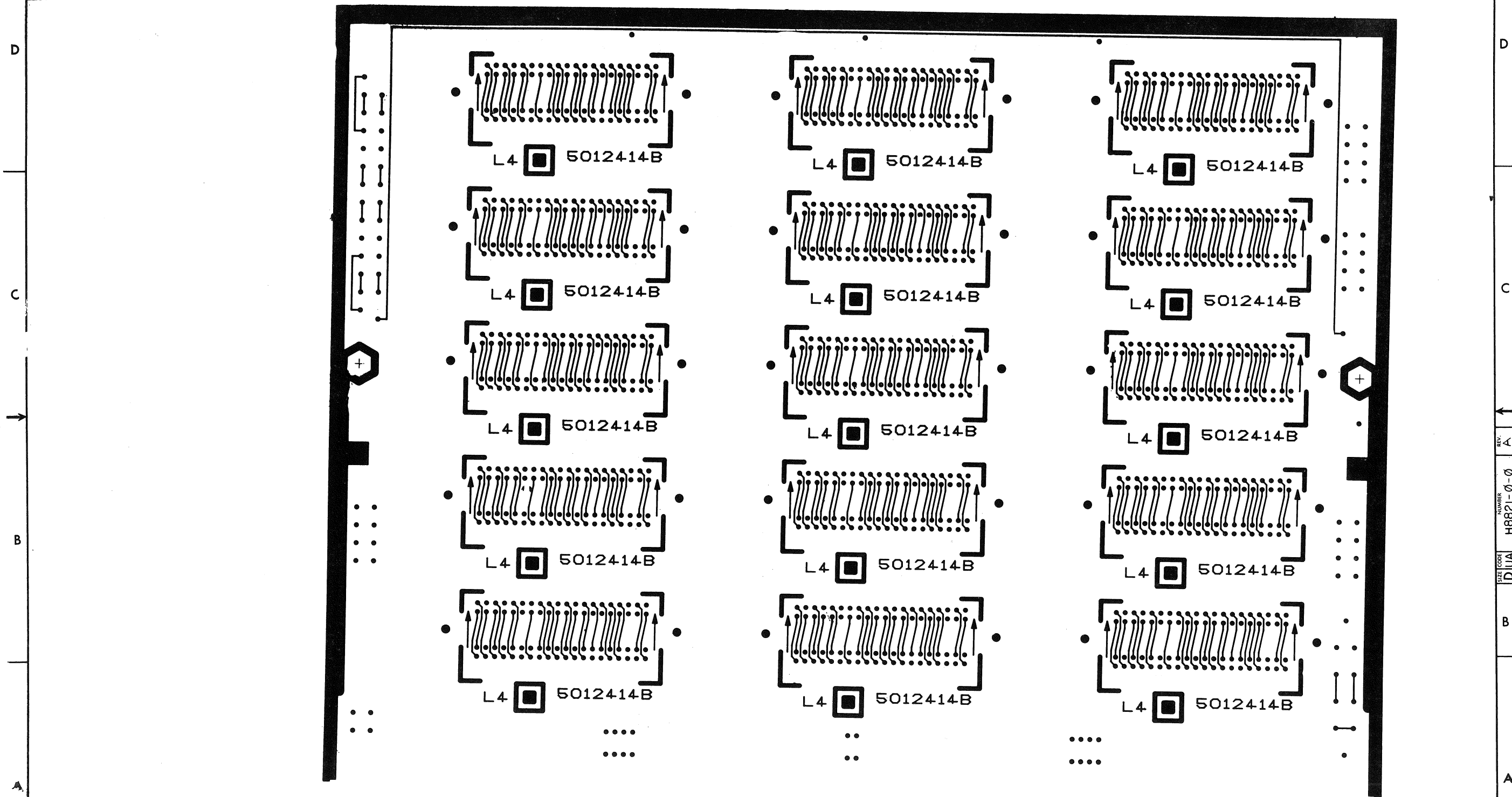
H8821-Ø-Ø

SIZE CODE

D UA

B

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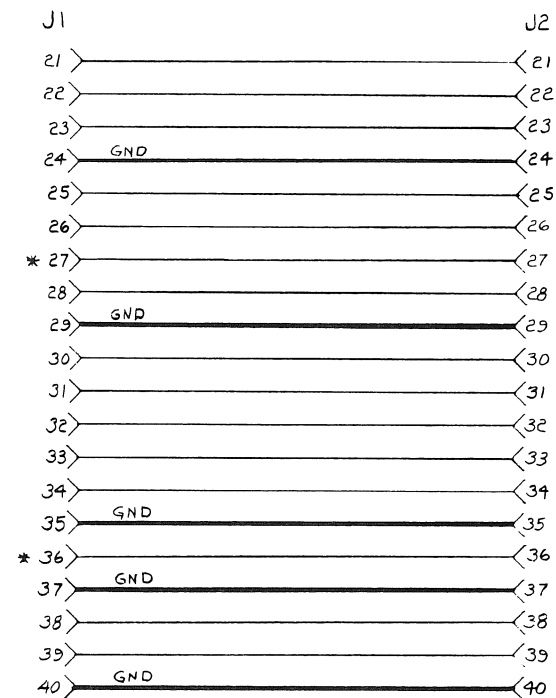
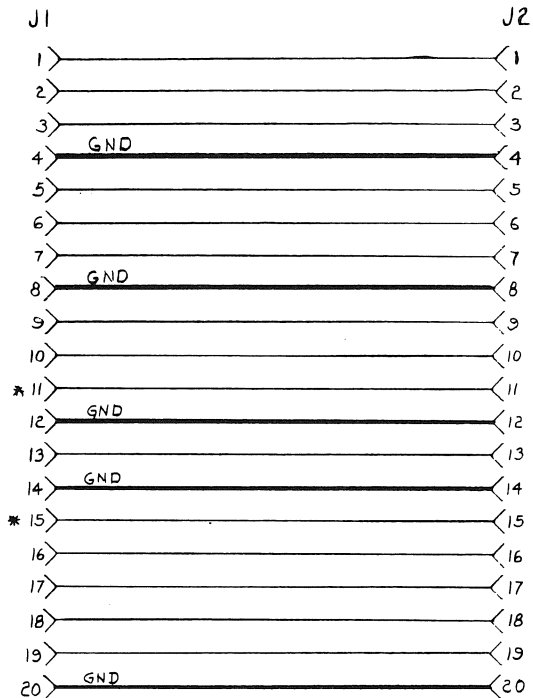


REVISIONS		
CHK	CHANGE NO.	REV.

TITLE		SIZE CODE	NUMBER		REV.
40 PIN INTERCONNECT BOARD		DUA	H8821-Ø-Ø		A
SCALE	2/1	SHEET	3 OF 3	DIST.	

[illegible]

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NOTES:

- * DESIGNATES CONDUCTORS TO BE LOCATED ON LAYER 2
- GND WILL BE ON LAYER 3 & REMAINING ETCH ON LAYER 4
- LAYER 1 (SIDE 1) WILL BE FREE OF ALL CIRCUITRY

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
PARTS LIST				
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES	DRN. F. MULLIGAN	DATE 8/3/76	digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS	
TOLERANCES	CHK'D. L. Sedman	DATE 8/4/76	TITLE	
DECIMALS	ENG. R. Barry	DATE 3 DEC 76	40 PIN INTERCONNECT BOARD	
ANGLES	PROJ. ENG. R. Barry	DATE 3 DEC 76	NUMBER	
.xxx = .005	PROD. R. Barry	DATE 6 DEC 76	C CS H8821-0-1	
.xx = .02			REV. A	
.x = .1			SIZE CODE	
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY	NEXT HIGHER ASSY.		NUMBER	
MATERIAL			REV.	
FINISH	SCALE N/A		A	
	SHEET 1 OF 1		DIST.	

2	0	UA	5412416-0-0	*
	SIZE	CODE	NUMBER	REV

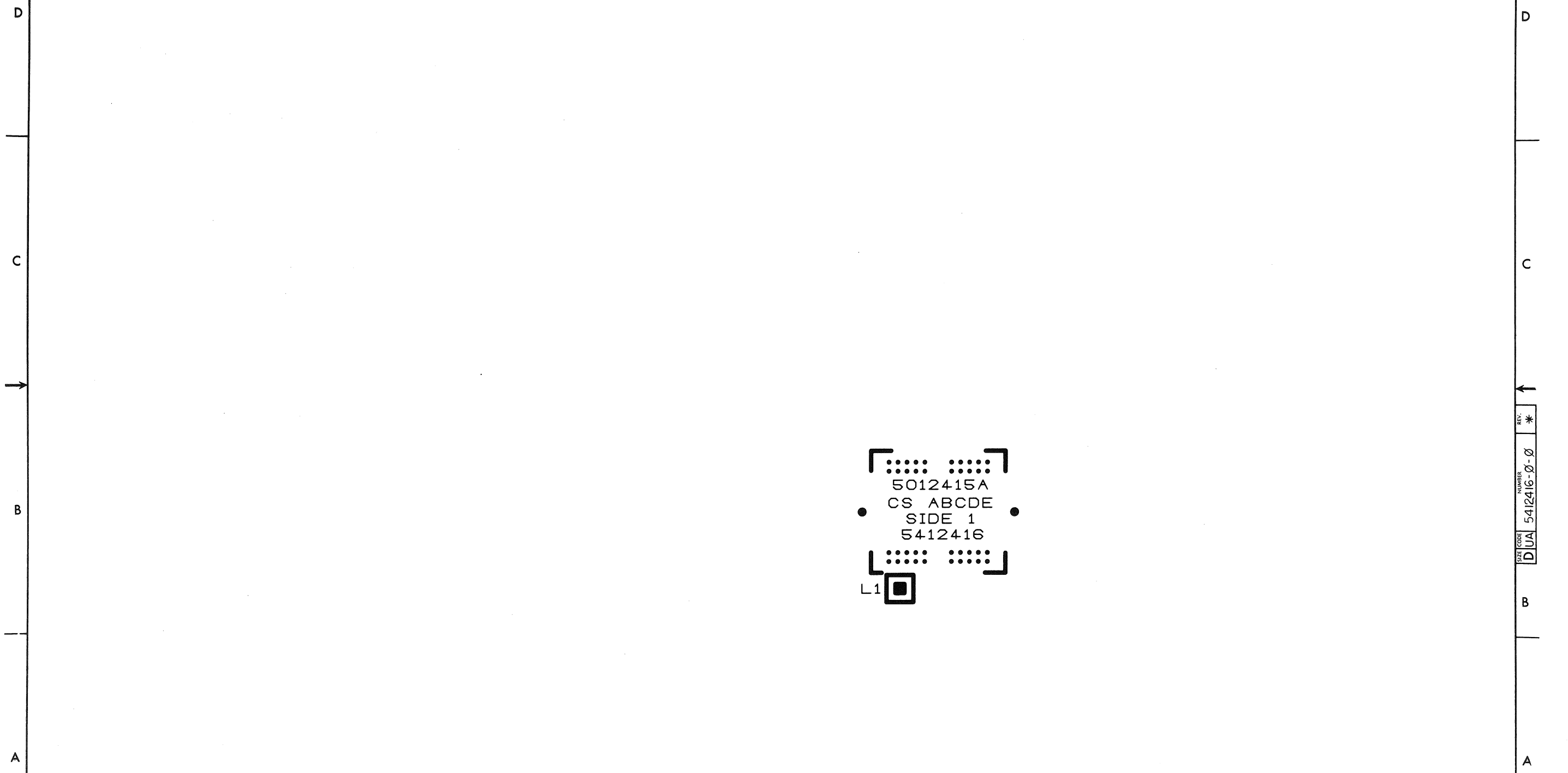


SIGNATURES		DATE	digital			
DRN. F. MULLIN		02/76				
CHK'D. F. SEIDMAN		04/76				
ENG. R. Barry		30/76	TITLE MODULE INTERCONNECT BOARD			
PROJ. ENG. R. Barry		30/76				
PROD. R. Barry		6/00/76				
SCALE 2/1						
SHT. 1 OF 3		SIZE	CODE	NUMBER	REV	
		0	UA	5412416-0-0	X	
NEXT HIGHER ASSY. B-DD-5412416						

ETCH REV. A
P.C. DESIGN DATA BASE REV. A

1 MS#60956

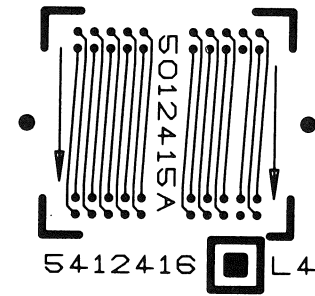
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REVISIONS		
CHK	CHANGE NO.	REV.

								TITLE	SIZE CODE	NUMBER	REV.
								MODULE INTERCONNECT BOARD	D UA	5412416-0-0	*
								SCALE 2/1	SHEET 2 OF 3	DIST.	

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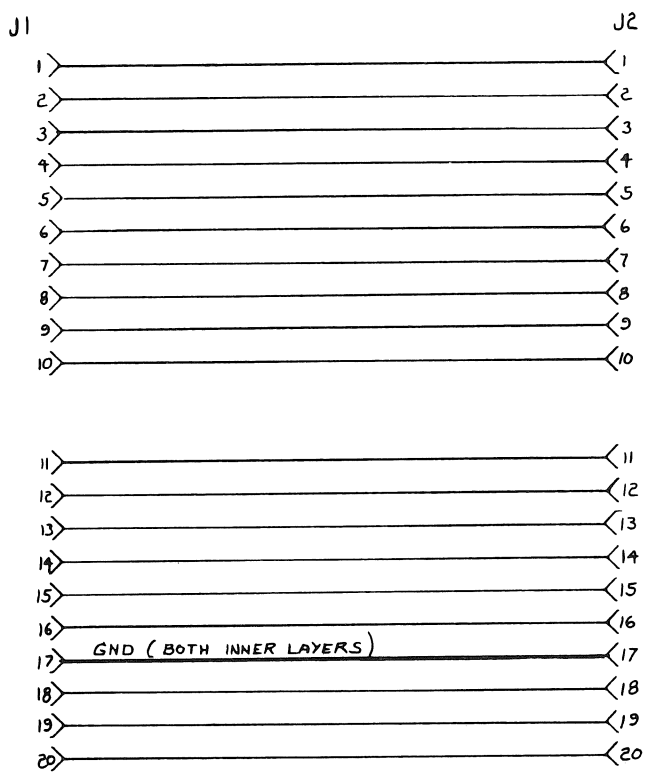


REVISIONS		
CHK	CHANGE NO.	REV.

TITLE		SIZE	CODE	NUMBER		REV.
MODULE INTERCONNECT BOARD		D	UA	5412416-Ø-Ø		*
SCALE 2/1		SHEET 3 OF 3		DIST.		

[illegible]

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NOTE :
1- ALL ETCH ON SIDE 2 ONLY EXCEPT GND PLANES.

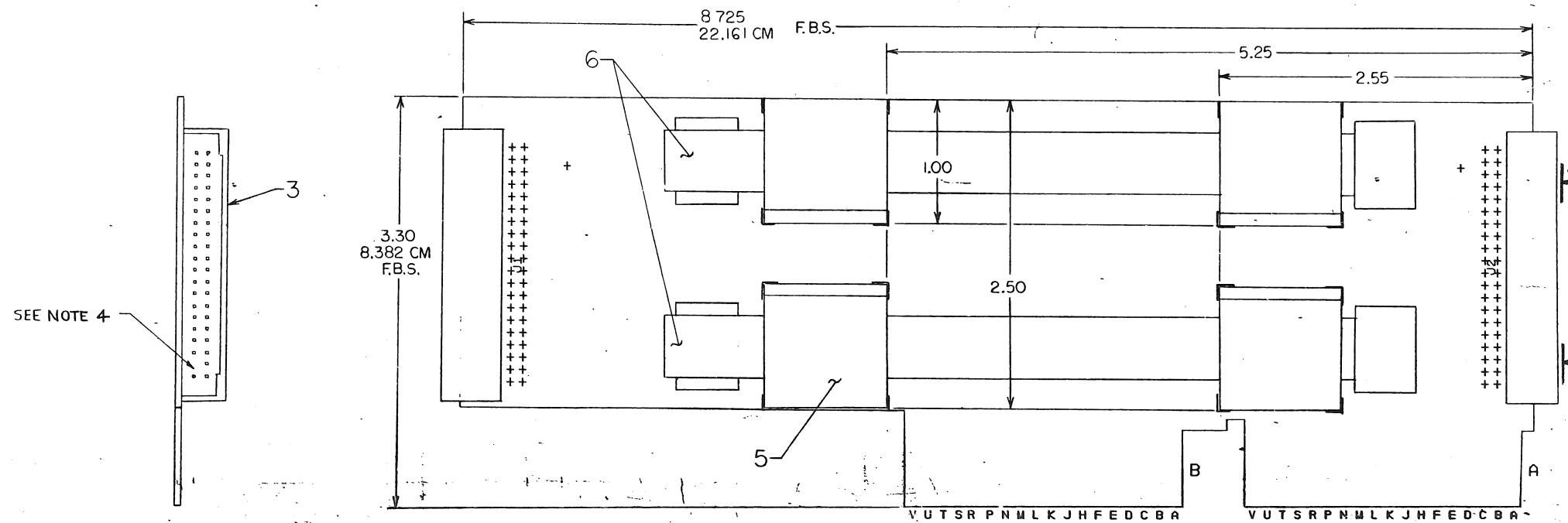
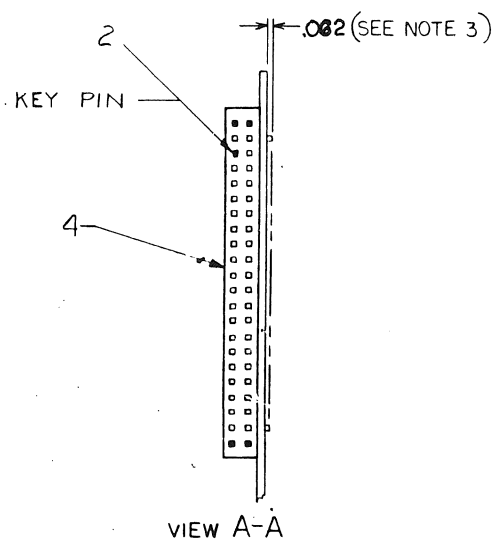
REVISIONS	
CHG	REV.

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.		
PARTS LIST						
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES	DRN. F. MULLIGAN	DATE 8/2/76	digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS			
TOLERANCES	CHK'D J. Swadlow	DATE 9/4/76				
DECIMALS	ENG R. Barry	DATE 3 Dec 76				
ANGLES	PROJ. ENG. R. Barry	DATE 3 Dec 76				
.xxx = .005 .xx = .02 .x = .1	PROJ. R. Barry	DATE 6 Dec 76				
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY	NEXT HIGHER ASSY.		TITLE MODULE INTERCONNECT BOARD			
MATERIAL	SCALE		SIZE	CODE	NUMBER	REV.
FINISH	SHEET 1 OF 1		C	CS	5412416-0-1	*

REV. *
NUMBER 5412416-0-0
SIZE CODE C

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COMPONENT SIDE VIEW



- NOTES:
1. THIS MODULE CAN BE USED AS A JUMPER CONTINUITY CARD.
 2. ITEM 6 CABLES ARE USED FOR MAINTENANCE PURPOSES ON THE FPIIA OPTIONS. SEE E-UA-FPIIA-0-0.
 3. TRIM ITEM 4 LEADS AFTER MOUNTING.
 4. REMOVE PIN INDICATED. (TO REMOVE PIN, STRAIGHTEN BACK END AND PULL OUT FROM FRONT OF CONNECTOR.)
 5. USE CABLE CLAMPS ITEM 5 TO STORE CABLES ITEM 6 WHEN NOT IN USE.

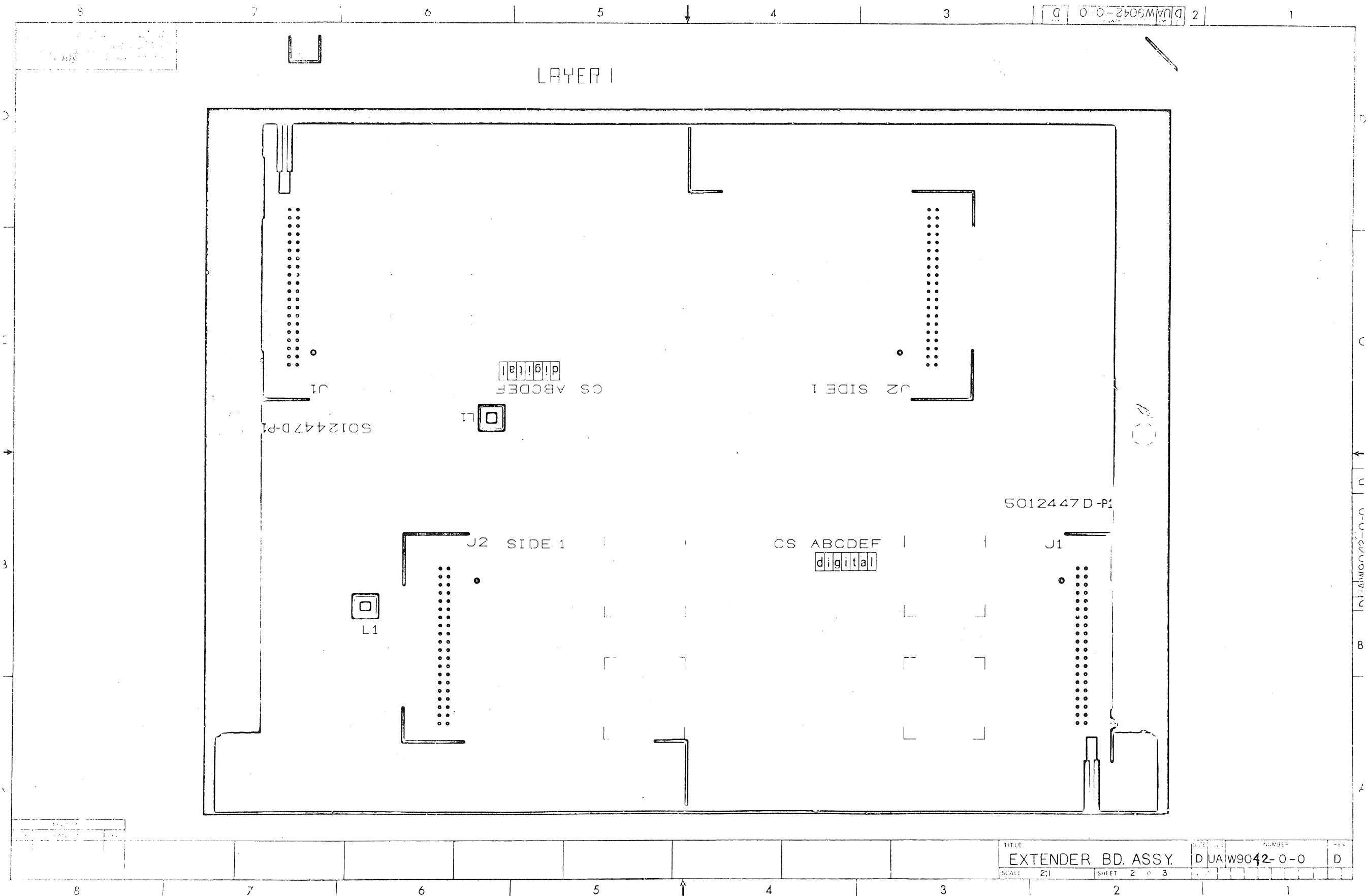
CHG	NO	REV	DATE	BY	CHK'D	DATE	BY
1	1	1	1/1/76	J. MERCURI			
2	1	1	1/1/76	J. MERCURI			
3	1	1	1/1/76	J. MERCURI			
4	1	1	1/1/76	J. MERCURI			
5	1	1	1/1/76	J. MERCURI			
6	1	1	1/1/76	J. MERCURI			
7	1	1	1/1/76	J. MERCURI			
8	1	1	1/1/76	J. MERCURI			

ETCH REV. D-PI	P.C. DESIGN (DATE) REV. D-PI
----------------	------------------------------

SIGNATURES	DATE	TITLE
DRN. F. MULLIGAN	1/1/76	
CHK'D. R. PUZZO	1/1/76	
ENG. R. BARRY	1/1/76	
PROJ. ENG. R. BARRY	1/1/76	
PROD. R. BARRY	1/1/76	
SCALE 2/1		
SHT. 1 OF 3		
NEXT HIGHER ASSY. B-DD-W9042-0		

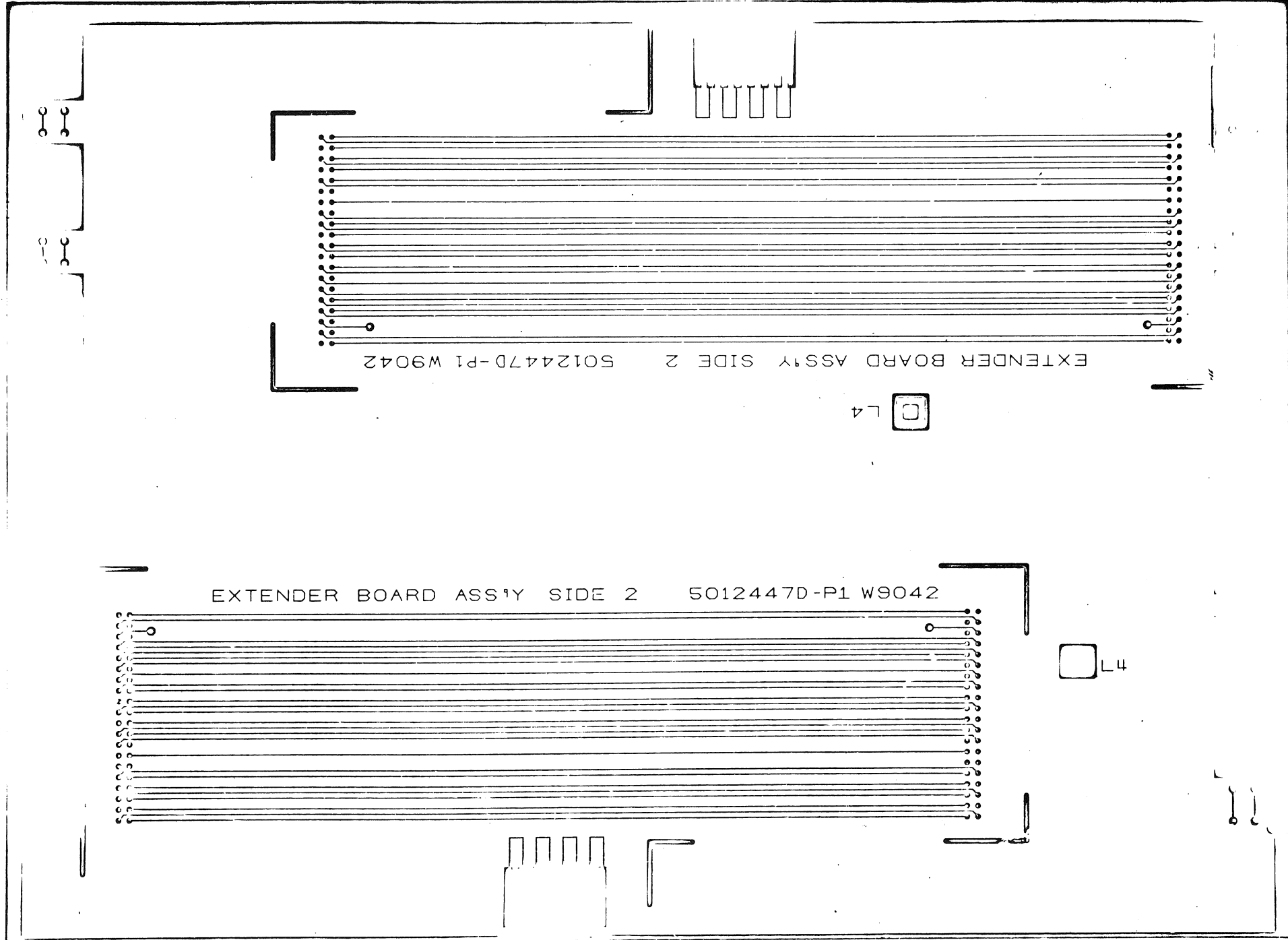
digital	EXTENDER BOARD ASSEMBLY	NUMBER	REV
		W9042-0-0	D

1 MS# 760142



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REVISIONS		
CHK	CHANGE NO	REV



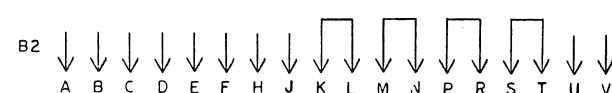
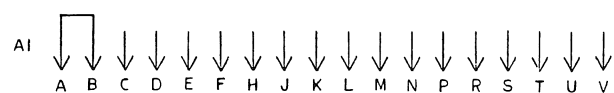
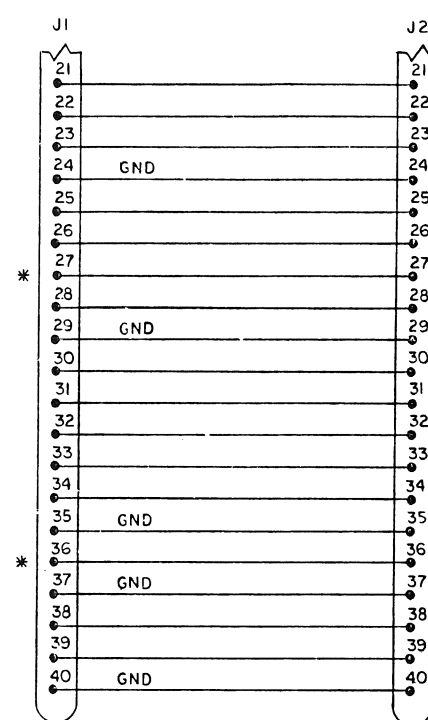
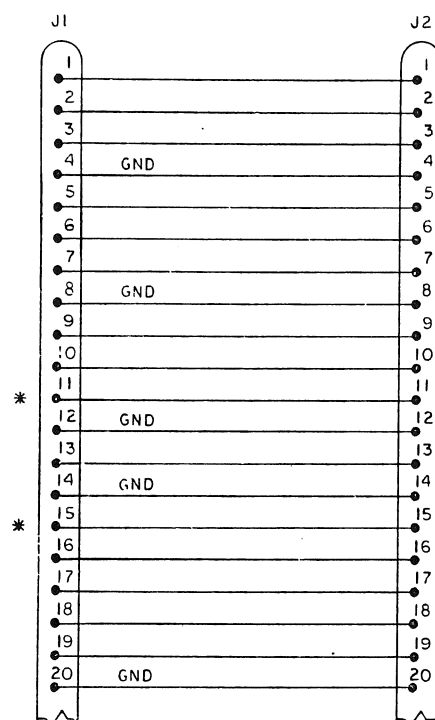
TITLE		SIZE CODE	NUMBER	REV.
EXTENDER PD. ASSY.		D	UA W9042-0-0	D
SCALE 1:1		SHEET 3 OF 3		DIST

LINE	ITEM	DOCUMENT NUMBER	PART NUMBER	DESCRIPTION	QTY	REFERENCE DESIGNATOR
1	1	D-MD-G012447-0-0	G012447-00	W9042	1	
2	2		1213508-03	CONN KEYING PLUG	1	
3	3		1213506-01	HEADER 40POS RT ANGLE W/3 SI	1	J2
4	4		1213947-00	SOCKET,100 40POS RT ANGLE	1	J1
5	5		9009636-00	CLAMP, CABLE, FOR FLAT CABLE	4	
6	6		7011411-1D	3M CABLE FOR KY11-LB	2	

REVISION HISTORY			BASIC PART NO: W9042				
ENG	ECO NUMBER	REV	SECTION 1 OF 1	DRN: F.MULLIGAN	DATE: 13-MAR-78	D I G I T A L	
INITIAL			SECTION VARIATION INDEX	CHK'D: F.MELANSON	DATE: 13-MAR-78	TITLE PARTS LIST	
WH	00002	C	[1] 00			FP11A EXTENDER BOARD ASSY	
RS	00003	D	[2]				
			[3]	DES.ENG: R.BARRY	DATE: 13-MAR-78		
			[4]				
			[5]			DOCUMENT NUMBER	
			[6]	RESP.ENG.: R.BARRY	DATE: 13-MAR-78		
			[7]			SIZE	CODE
			[8]			NUMBER	REV
			[9]	MFG.ENG.: R.KING	DATE: 13-MAR-78	K	PL
			[10]			W9042-0-DBP	
			[11]	ASSEMBLY NUMBER:			FILE NAME:
			[12]	D-UA-W9042-0-0			W9042.PLS
						EDIT #	
						1	

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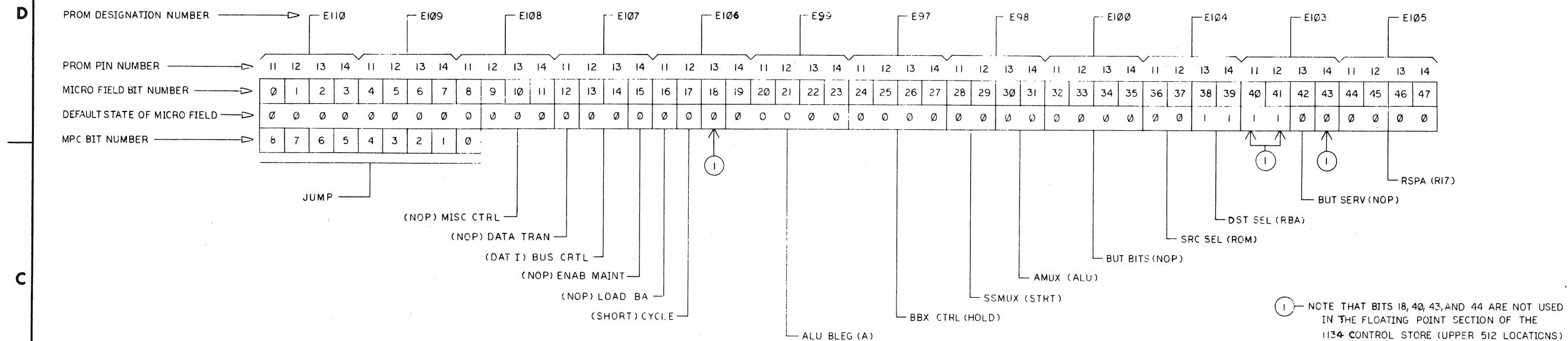
NOTE: 1. (*) DESIGNATES ETCH CONNECTION ON LAYER 2

DRN. <i>Q110000</i>	<i>8-25-74</i>	FIRST USED ON		<i>21-10-74</i>	
CHK'D <i>10000</i>	<i>10000</i>	TITLE EXTENDER BOARD ASSEMBLY			
ENG. <i>10000</i>	<i>10000</i>				
PROJ. EN. <i>10000</i>	<i>10000</i>				
PROD. <i>10000</i>	<i>10000</i>				
NEXT HIGHER <i>10000</i>		SIZE	CODE	NUMBER	REV
SCALE <i>1/1</i>		D	CS	<i>W9042-0-1</i>	<i>1</i>
SHEET	OF	DIS			

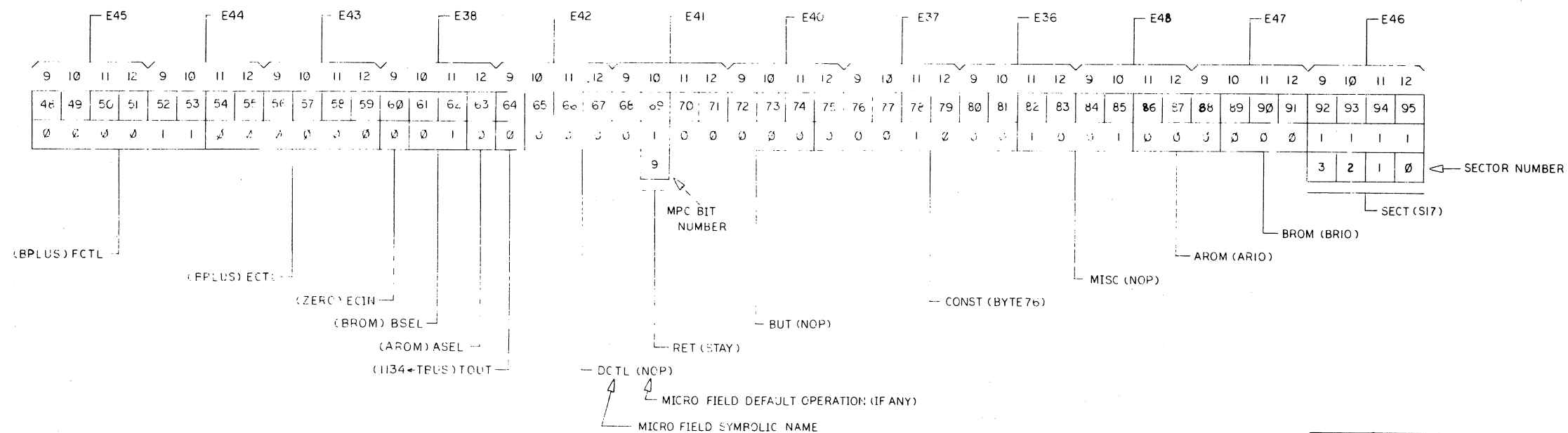
DIGITAL EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS PARTS LIST					QUANTITY / VARIATION														
MADE BY D. HEALY		CHECKED D. HEALY		SECTION		FP11-A													
DATE 10 NOV. 76		DATE 10 NOV. 76		1															
ENG <i>J. W. Mitchell</i>		PROD <i>X. S. ...</i>		ISSUED SECT.															
DATE 12-20-76		DATE 12-21-76		1															
ITEM NO.	DWG NO. / PART NO.	DESCRIPTION																	
	MP00189	FP11-A FIELD MAINTENANCE PRINT SET				1													
	EK-FP11-A-TM-PRE	FP11-A FLOATING POINT MANUAL				1													
	ZJ232-RB	SOFTWARE LIBRARY KIT (PAPER TAPE)				1													
TITLE		ASSY NO.		SIZE	CODE	NUMBER				REV.		ECO NO.							
FP11-A SHIPPING LIST		NONE		A	PL	FP11-A-3													
		SHEET 1 OF 1		DIST.															

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FPII-A CONTROL WORD (WITHIN M8266)



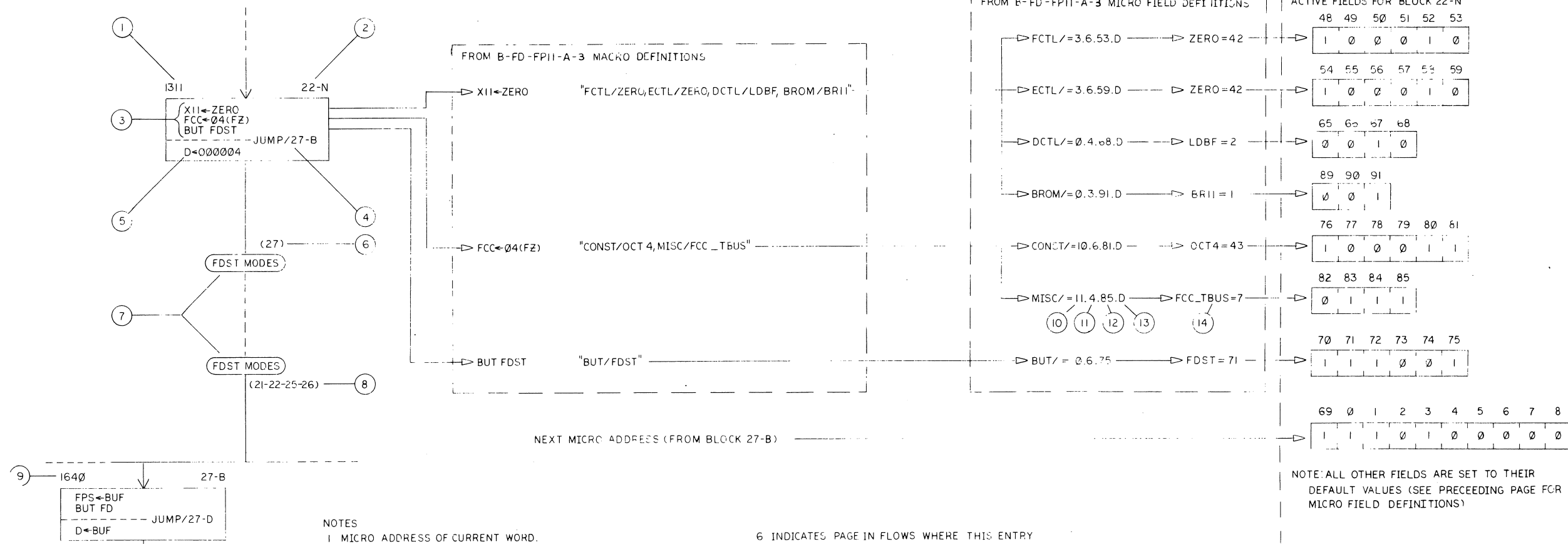
FP11-A CONTROL WORD (WITHIN M8267)



DRN. <i>2-11-77</i>	DATE <i>2-11-77</i>	FIRST USED ON FPII-A		digital	A
CHK'D <i>2-11-77</i>	<i>2-11-77</i>	TITLE FPII-A FLOW DIAGRAMS			
ENG. <i>2-11-77</i>	<i>2-11-77</i>				
PROJ. ENG. <i>2-11-77</i>	<i>2-11-77</i>				
PROD. <i>2-11-77</i>	<i>2-11-77</i>				
NEXT HIGHER ASSY.					
B-DD-FPII-A		SIZE	CODE	NUMBER	REV.
SCALE <i>1:1</i>		D	FD	FPII-A-2	
SHEET <i>1</i> OF <i>40</i>		DIST.			

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KEY TO MICRO FLOW SYMBOLOGY

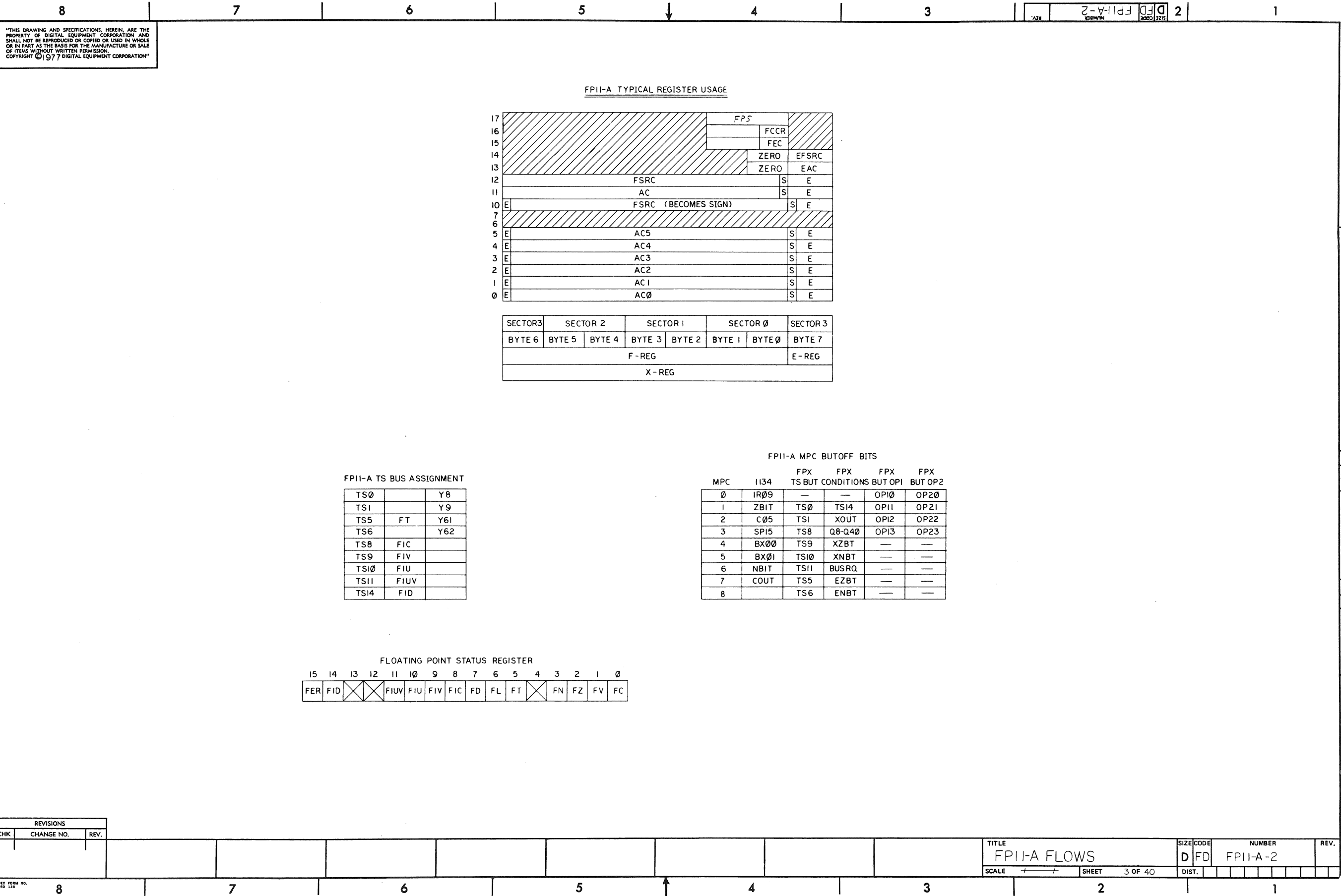


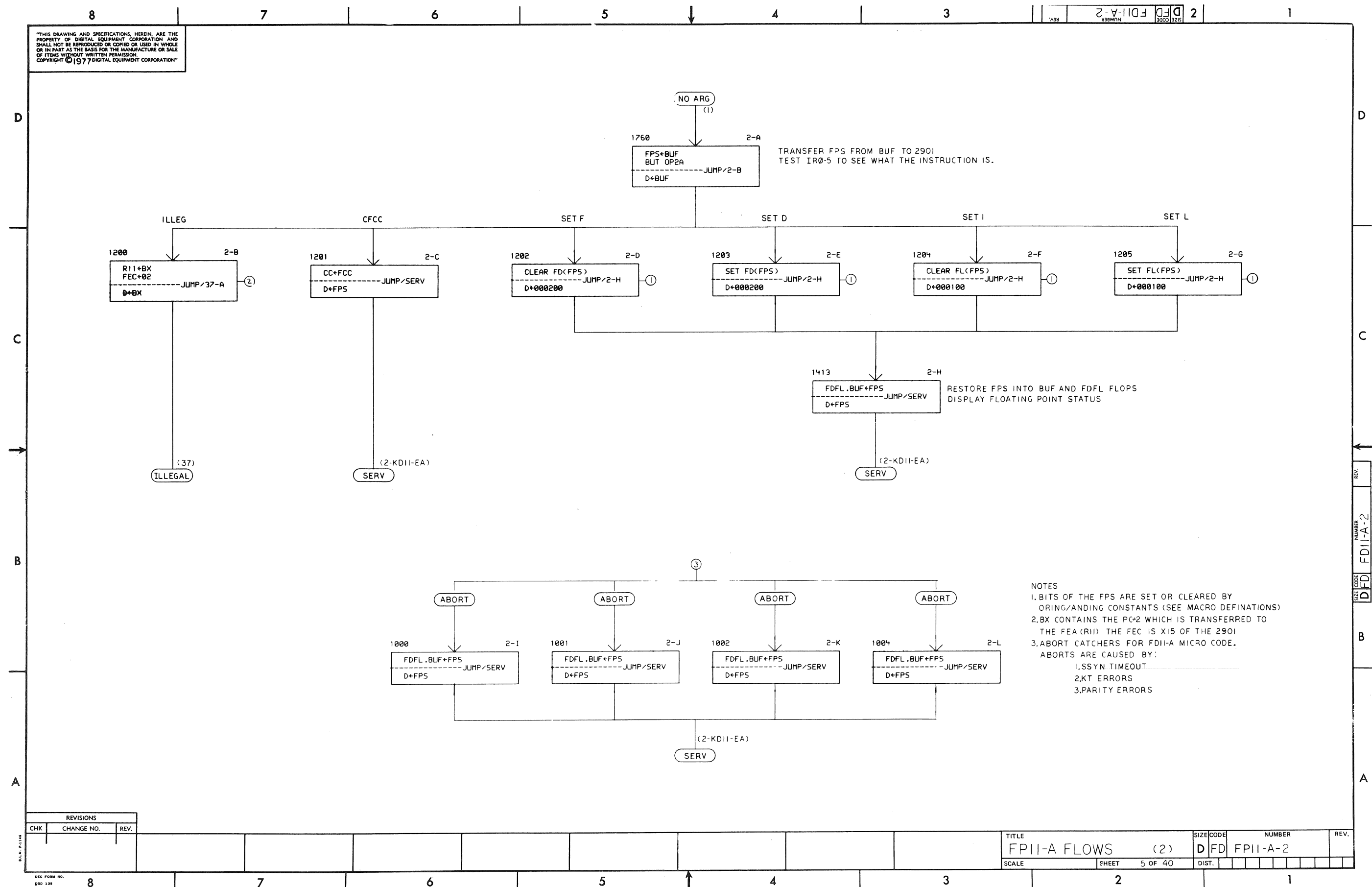
NOTES

- 1 MICRO ADDRESS OF CURRENT WORD.
- 2 SYMBOLIC TAG OF CURRENT WORD CONSISTS OF PAGE NUMBER AND BLOCK LABEL (PAGE-BLOCK)
- 3 MICRO OPERATIONS WHICH TAKE PLACE DURING THIS STATE. THE FIELDS WHICH ARE INVOLVED IN CARRYING OUT THESE OPERATIONS CAN BE DETERMINED USING:
FPII-A MACRO DEFINITIONS
FPII-A MICRO FIELD DEFINITIONS
- 4 27-B IS THE SYMBOLIC TAG OF THE NEXT MICRO WORD (TARGET) ASSUMING NO BRANCHING (DESTINATION MODE 0) THIS CAN BE USED TO DETERMINE THE NEXT ADDRESS FIELD OF THE CURRENT MICRO WORD.
- 5 "D" STANDS FOR DISPLAY. IN THIS CASE, 000004 WILL APPEAR ON THE CONSOLE DISPLAY IF OPERATING IN MAINTENANCE MODE.
- 6 INDICATES PAGE IN FLOWS WHERE THIS ENTRY POINT CAN BE FOUND.
- 7 EXIT AND ENTRY LABELS ARE USED TO INDICATE LOGICAL FLOW FROM PAGE TO PAGE
- 8 INDICATES PAGES IN FLOWS FROM WHICH ENTRY POINT IS CALLED.
- 9 THIS ADDRESS IS THE TARGET OF THE JUMP FIELD OF BLOCK 22-N
- 10 DEFAULT VALUE OF THIS FIELD
- 11 NUMBER OF BITS IN THIS FIELD
- 12 LOCATION OF RIGHT MOST BIT OF THIS FIELD WITHIN MICRO WORD
- 13 INDICATES THAT THE DEFAULT IS TAKEN IF NOTHING ELSE IS SPECIFIED
- 14 OCTAL VALUE OF MICRO FIELD LITERAL

REVISIONS		
CHK	CHANGE NO.	REV.

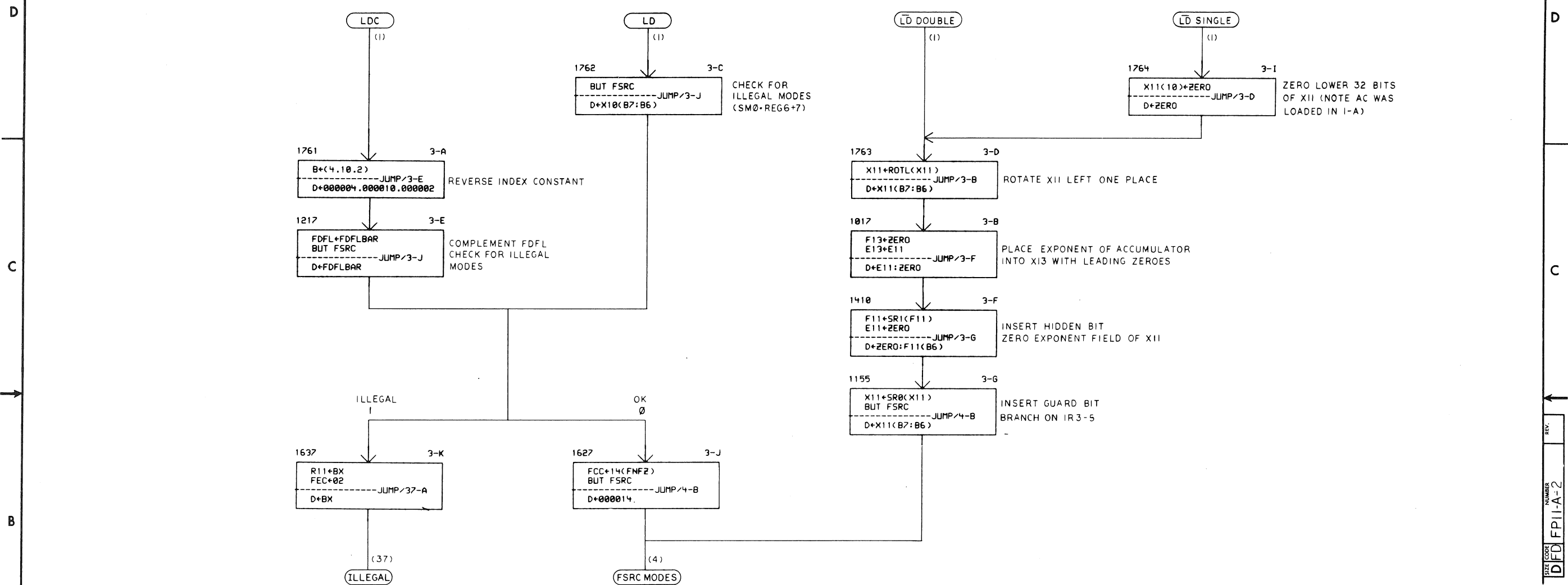
TITLE FPII-A FLOWS							SIZE CODE D FD	NUMBER FPII-A-2	REV.
SCALE + + +							SHEET 2	OF 40	DIST.





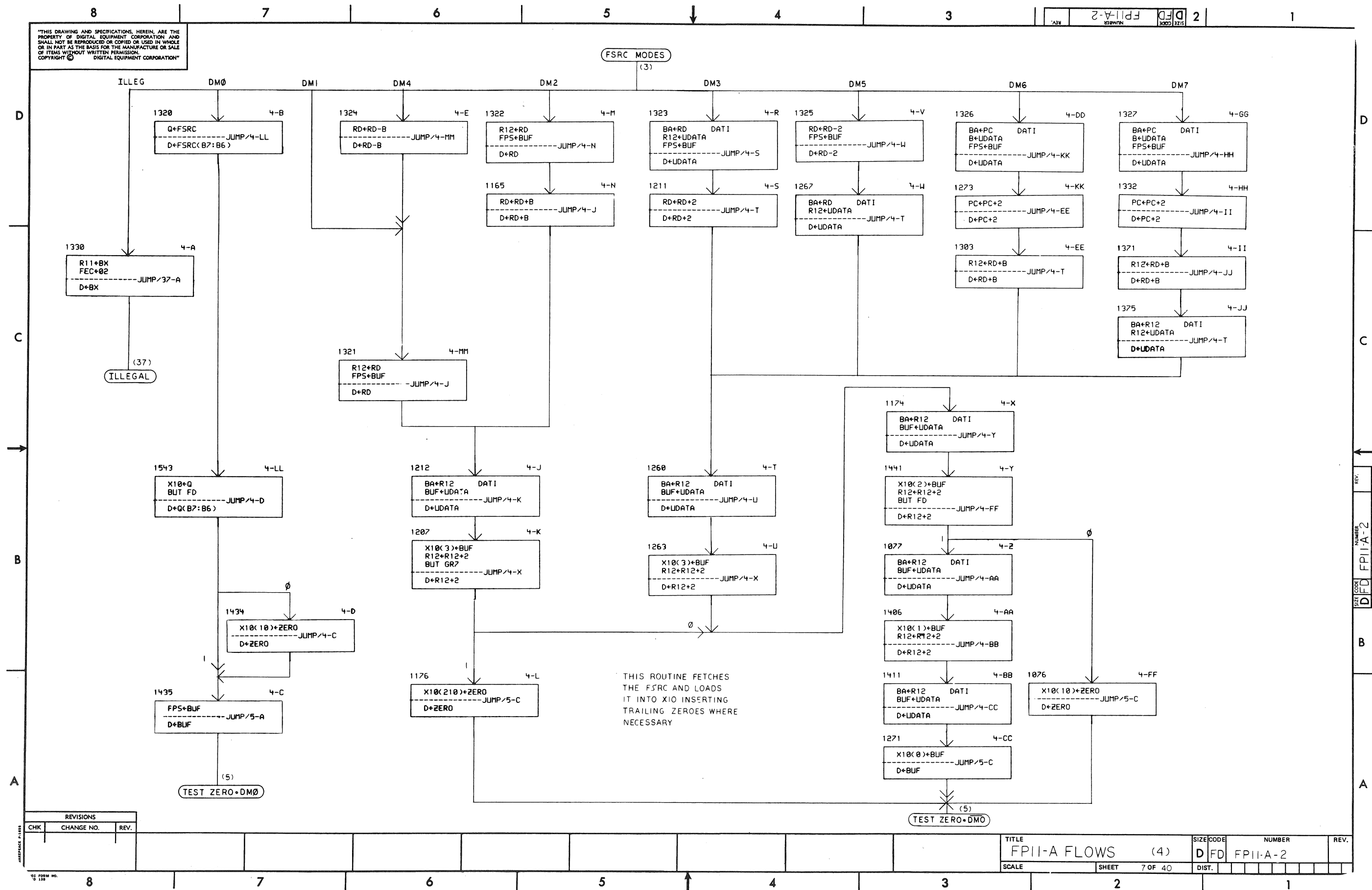
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REV. 2
D FD FPII-A-2
SIZE CODE 3215

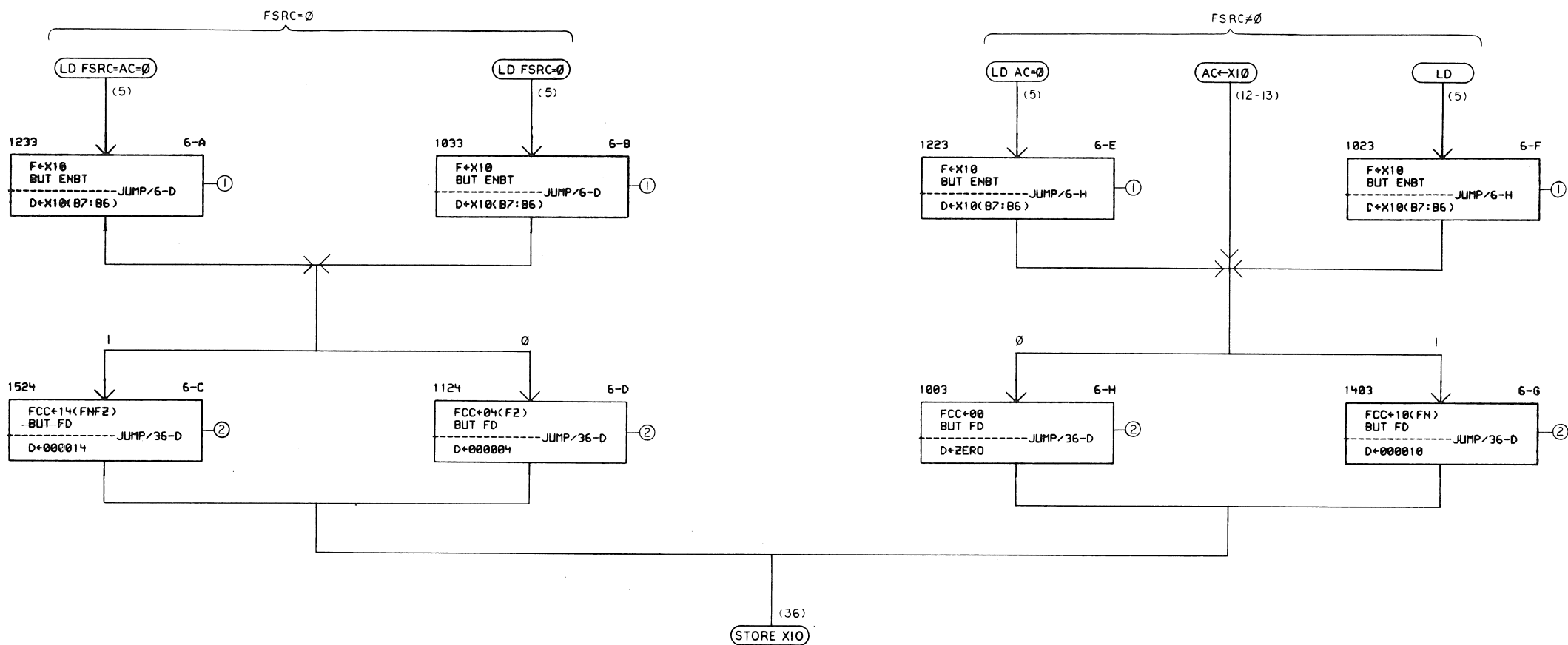


REVISIONS		
CHK	CHANGE NO.	REV.

TITLE FPII-A FLOWS (3)						SIZE CODE D FD		NUMBER FPII-A-2		REV.
SCALE						SHEET 6 OF 40		DIST.		



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NOTES

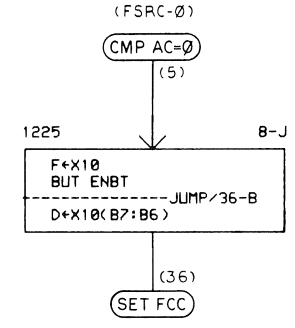
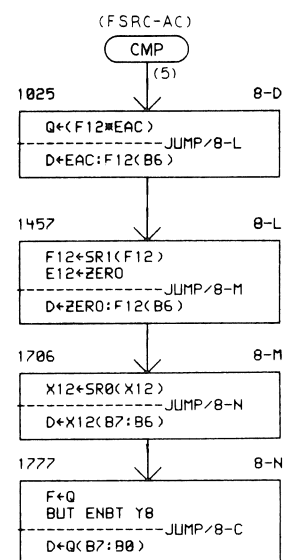
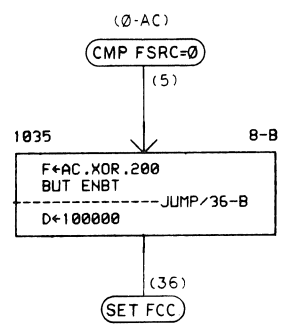
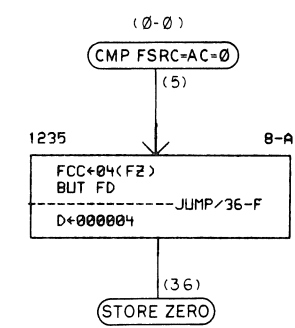
1. TEST SIGN OF FSRC (X10:BIT 7)
2. SET FLOATING CONDITION CODES (FCC) USING THE APPROPRIATE CONSTANT.
NOTE THAT THE FCC IS CONTAINED IN THE LOWER FOUR BITS OF THE BUFFER (BUF).

REVISIONS		
CHK	CHANGE NO.	REV.

DEC FORM NO. 000 130

TITLE		SIZE	CODE	NUMBER		REV.
FPII-A FLOWS (6)		D	FD	FPII-A-2		
SCALE		SHEET 9 OF 40		DIST.		

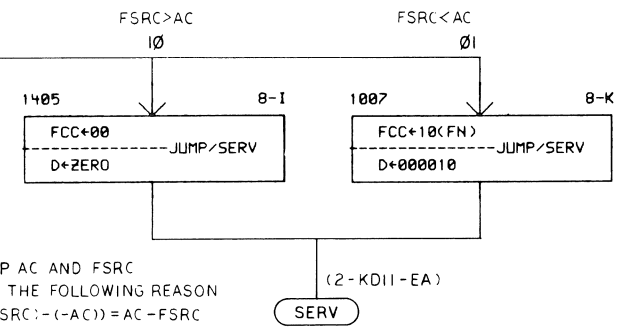
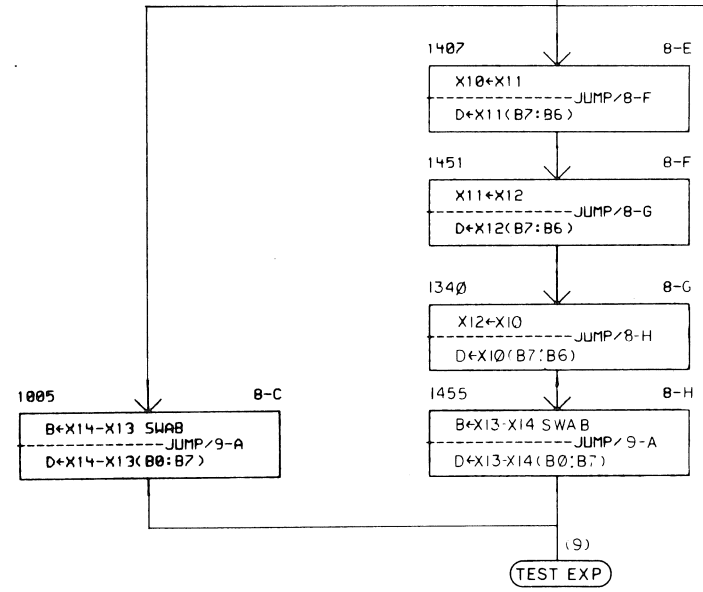
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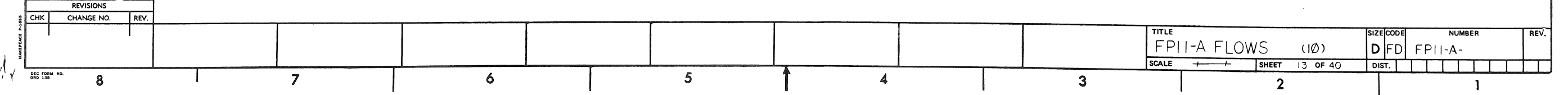
THE COMPARE INSTRUCTION IS ACCOMPLISHED BY SUBTRACTING THE AC FROM THE FSRC AND SETTING THE CONDITION CODES ON THE RESULT. THIS ALGORITHM FORCES TRIVIAL CASES TO FALL OUT AS FOLLOWS:

- 1 TEST FOR ZERO OPERANDS (8-A,8-B,8-J)
- 2 TEST FOR OPPOSITE SIGNS (8-I,8-K)
- 3 TEST FOR NONEQUAL EXPONENTS (9-G,9-H)
- 4 TEST FRACTIONAL DIFFERENCE

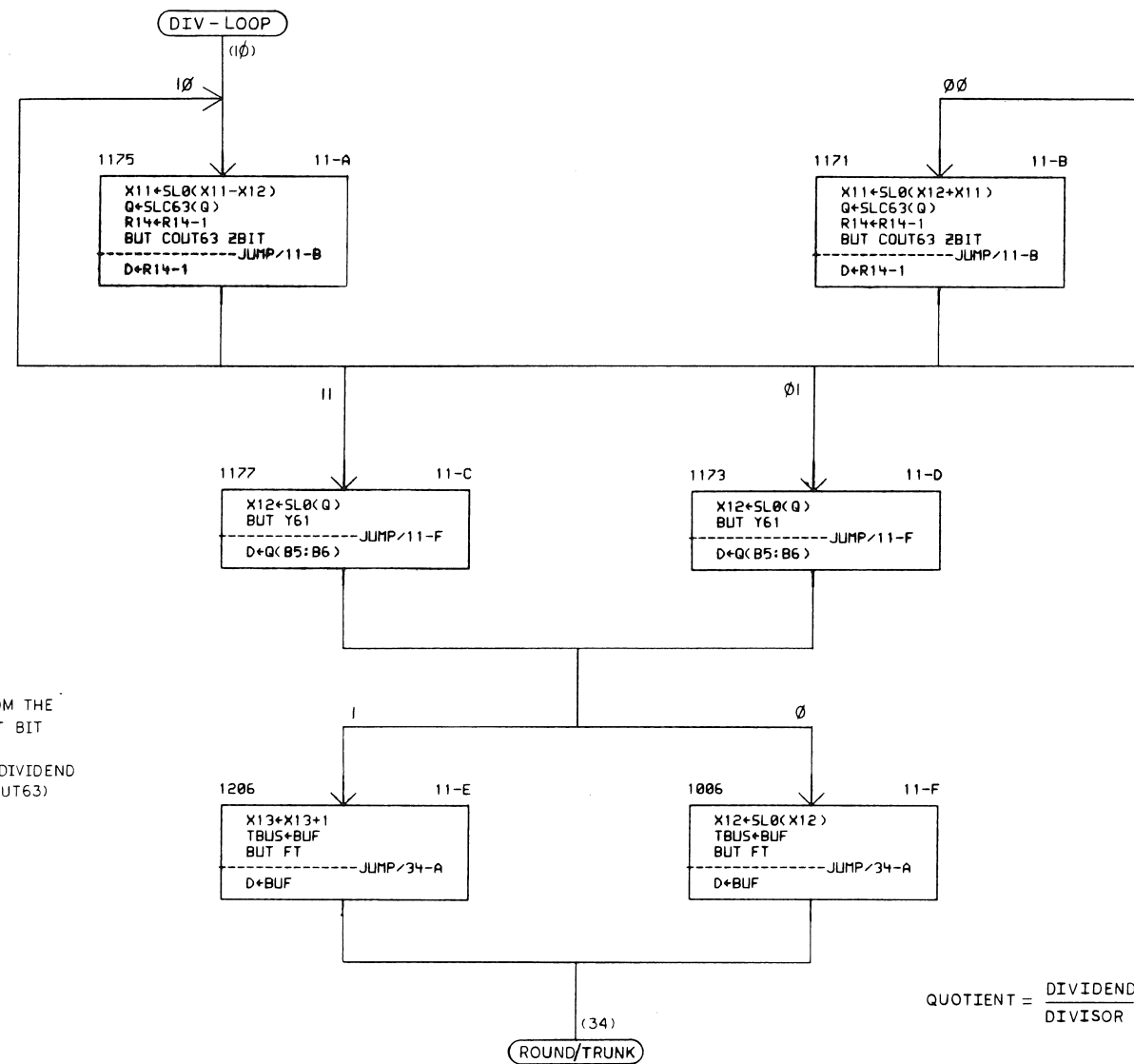
POSITIVE SIGNS 00
NEGATIVE SIGNS 11



REVISIONS		
CHK	CHANGE NO.	REV.



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THIS IS A NONRESTORING
DIVISION ALGORITHM IN WHICH:

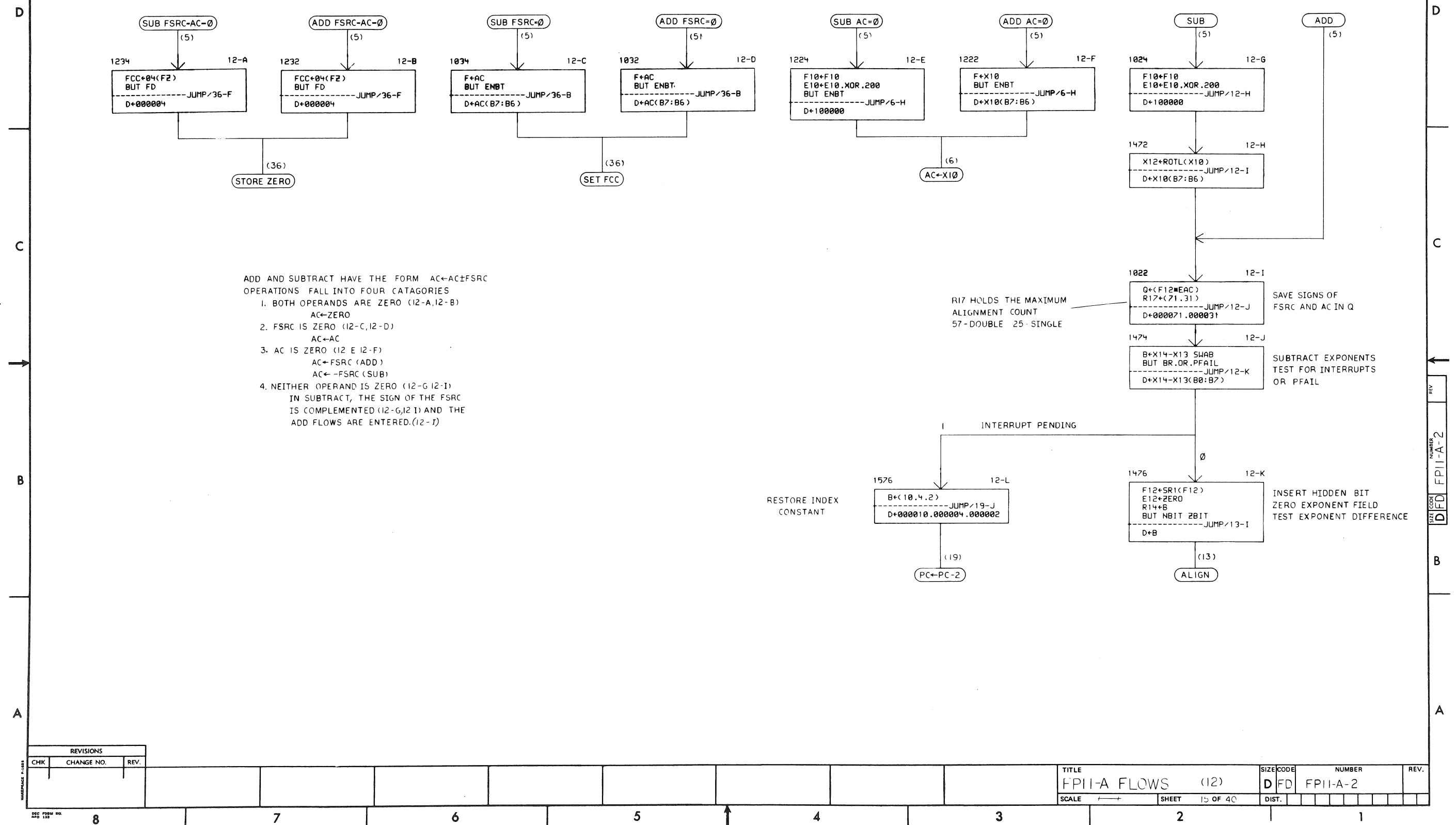
1. THE DIVISOR IS SUBTRACTED FROM THE
DIVIDEND IF THE LAST QUOTIENT BIT
(COUT63) WAS ONE.
2. THE DIVISOR IS ADDED TO THE DIVIDEND
IF THE LAST QUOTIENT BIT (COUT63)
WAS ZERO.

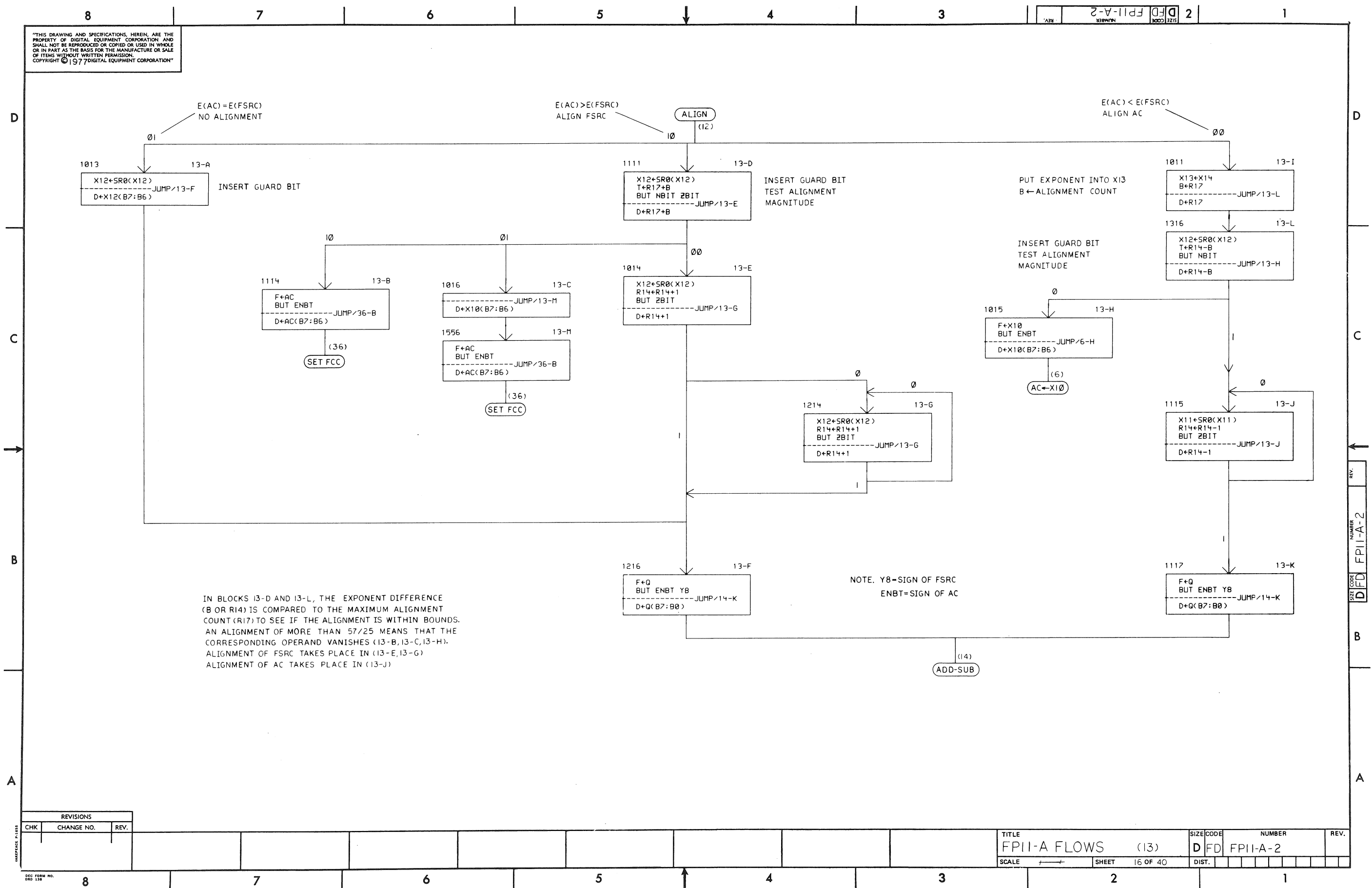
$$\text{QUOTIENT} = \frac{\text{DIVIDEND}}{\text{DIVISOR}} = \frac{AC}{FSRC} = \frac{X11}{X12}$$

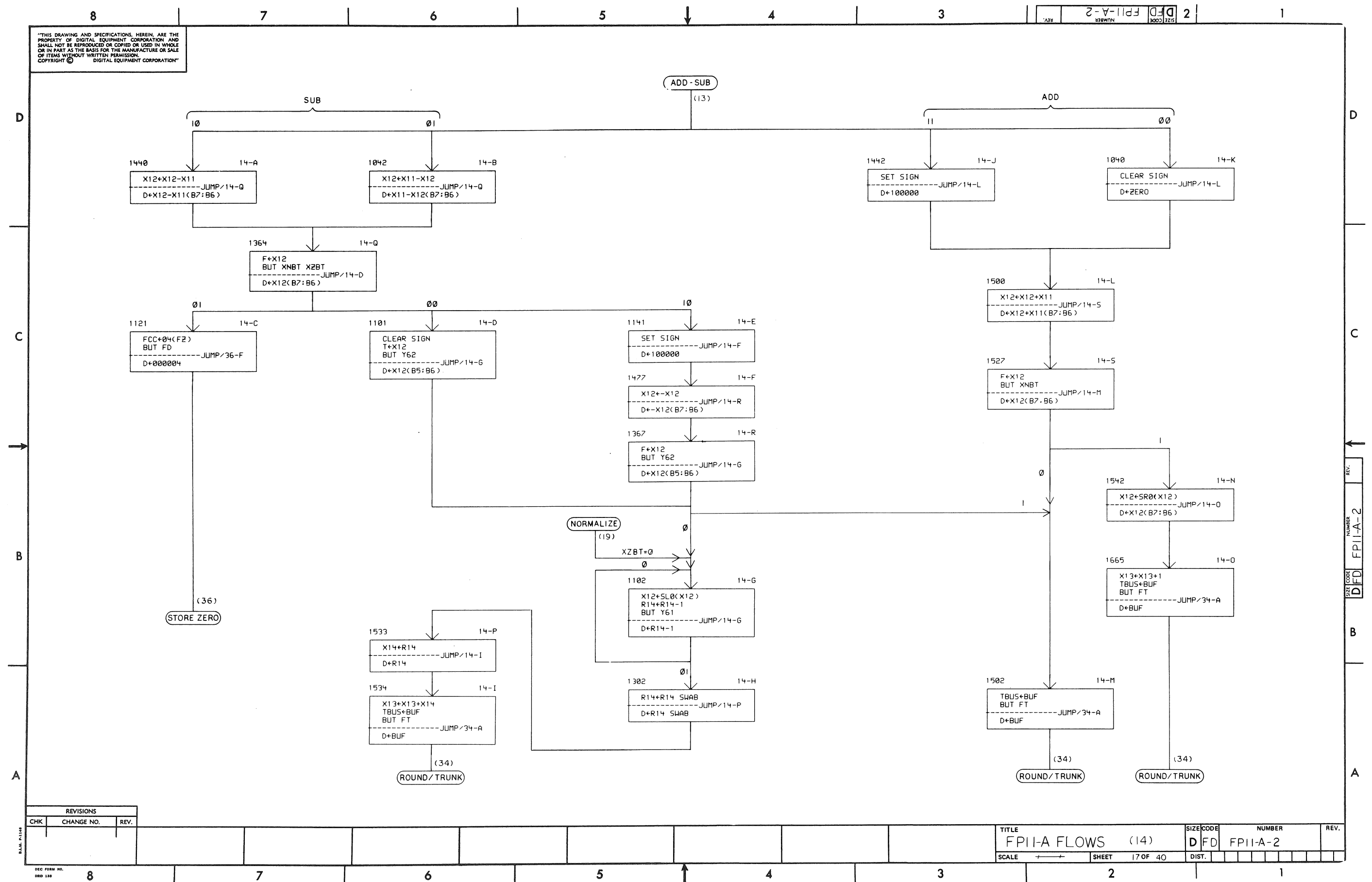
REVISIONS		
CHK	CHANGE NO.	REV.

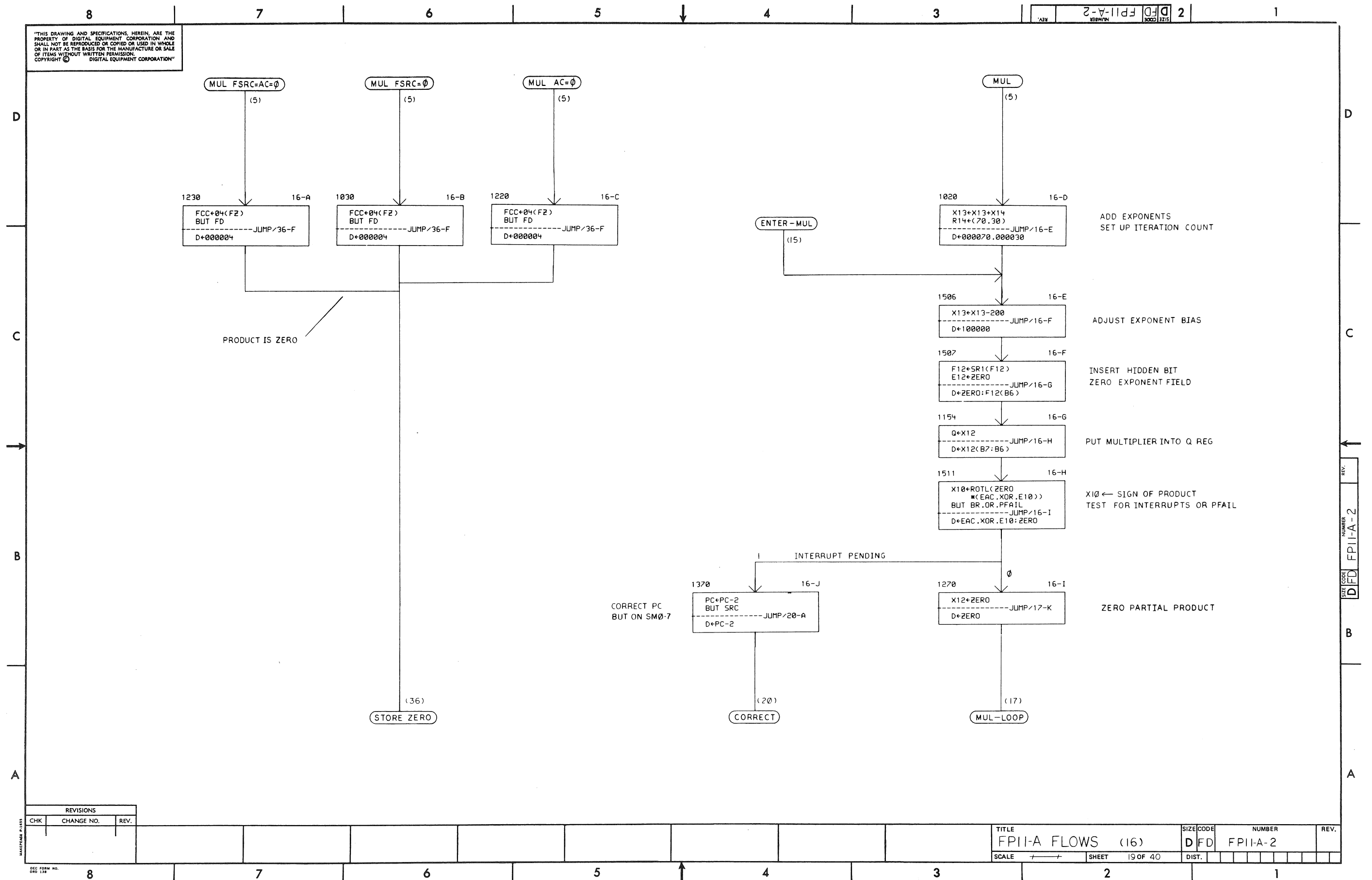
DEC FORM NO.
DSD 128

TITLE		SIZE CODE	NUMBER	REV.
FPII-A FLOWS (II)		D FD	FPII-A-	
SCALE		SHEET	14 OF 40	DIST.



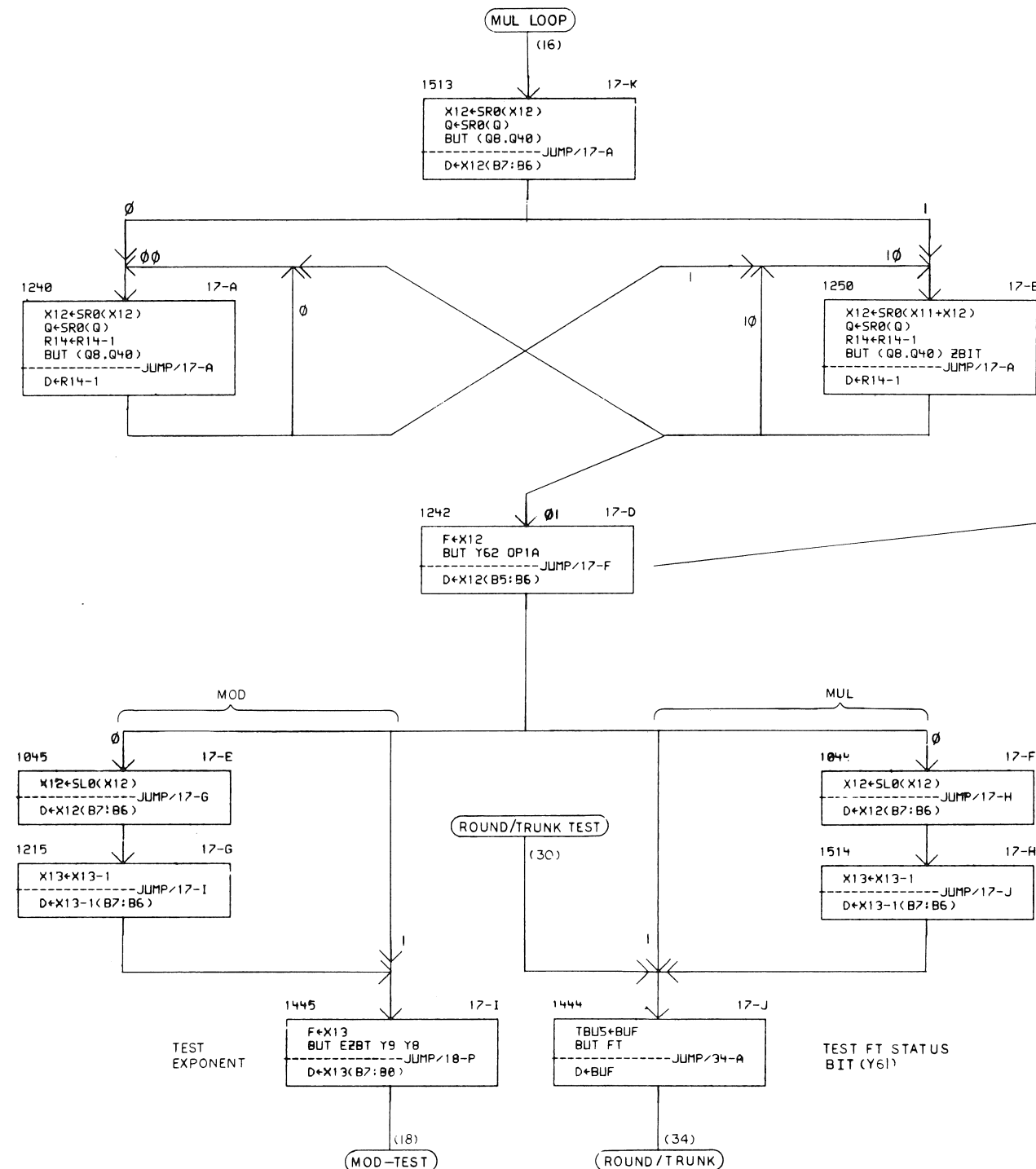






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REV. 2
SIZE CODE
NUMBER
FPII-A-2



ALL SHIFTING IS DONE
WHEN WE DROP OUT OF
THIS LOOP LEFT GARD
BIT IS ZERO

TEST MSB OF PRODUCT TO
SEE IF PRE-NORMTLIZATION
IS NESCESSARY. ALSO BREAK
OUT MUL AND MOD INTO SEPARATE
FLOWS.

SHIFT PRODUCT LEFT ONE PLACE

DECREMENT EXPONENT

REVISIONS		
CHK	CHANGE NO.	REV.

DEC FORM NO.
000 100

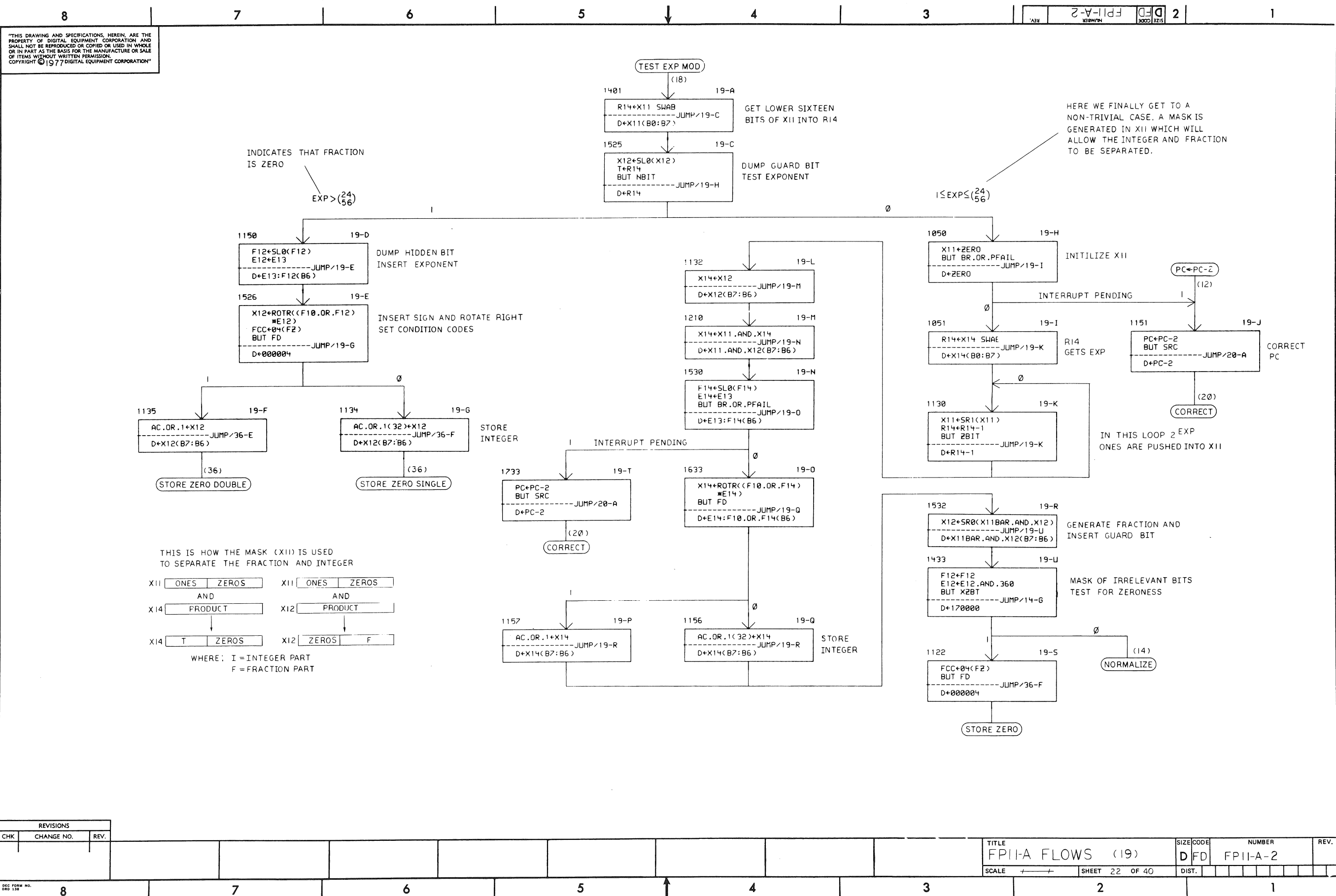
TITLE
FPII-A FLOWS (17)

SIZE CODE
D FD
NUMBER
FPII-A-2

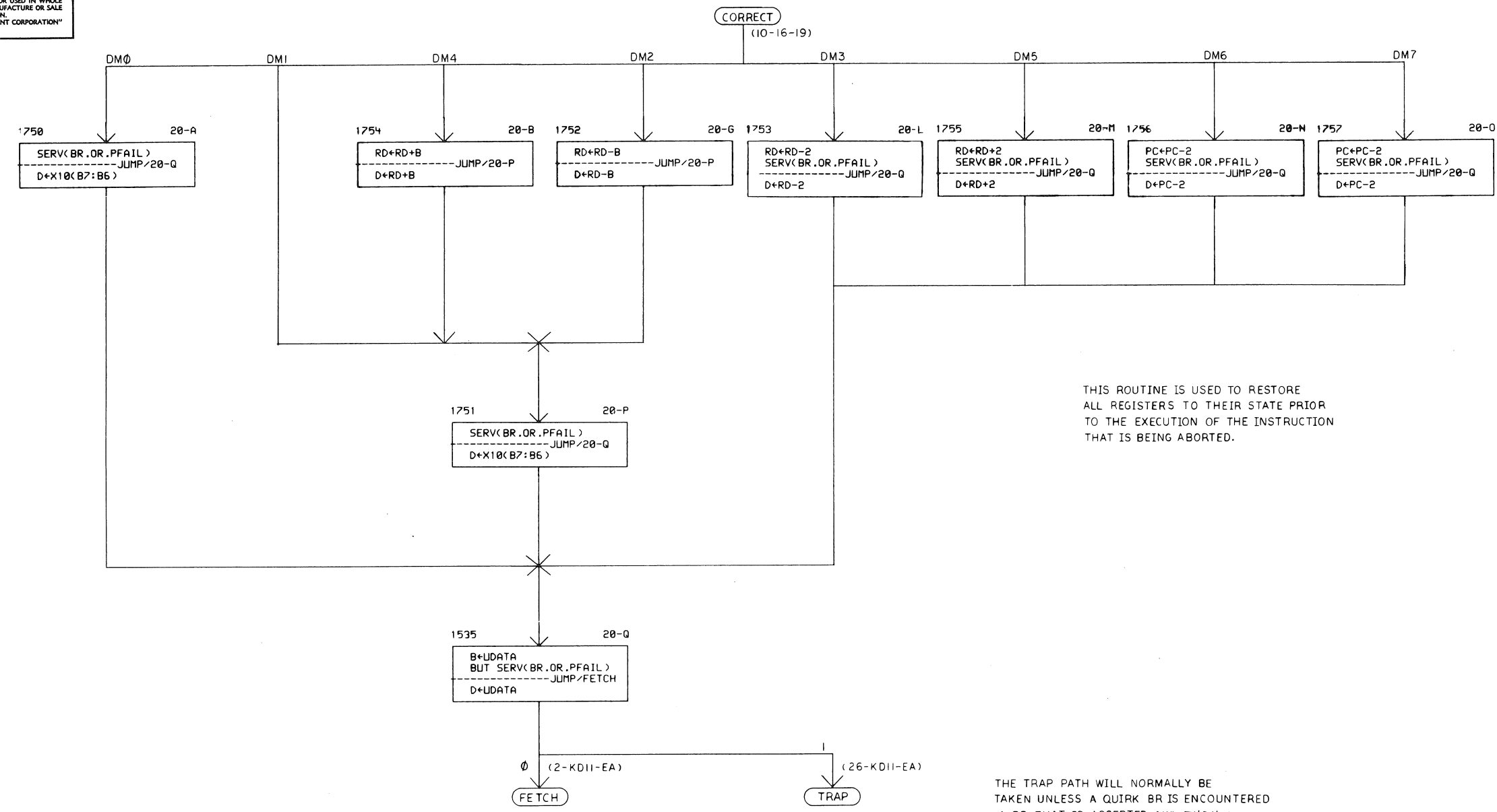
REV.

SCALE 1"=1' SHEET 20 OF 40

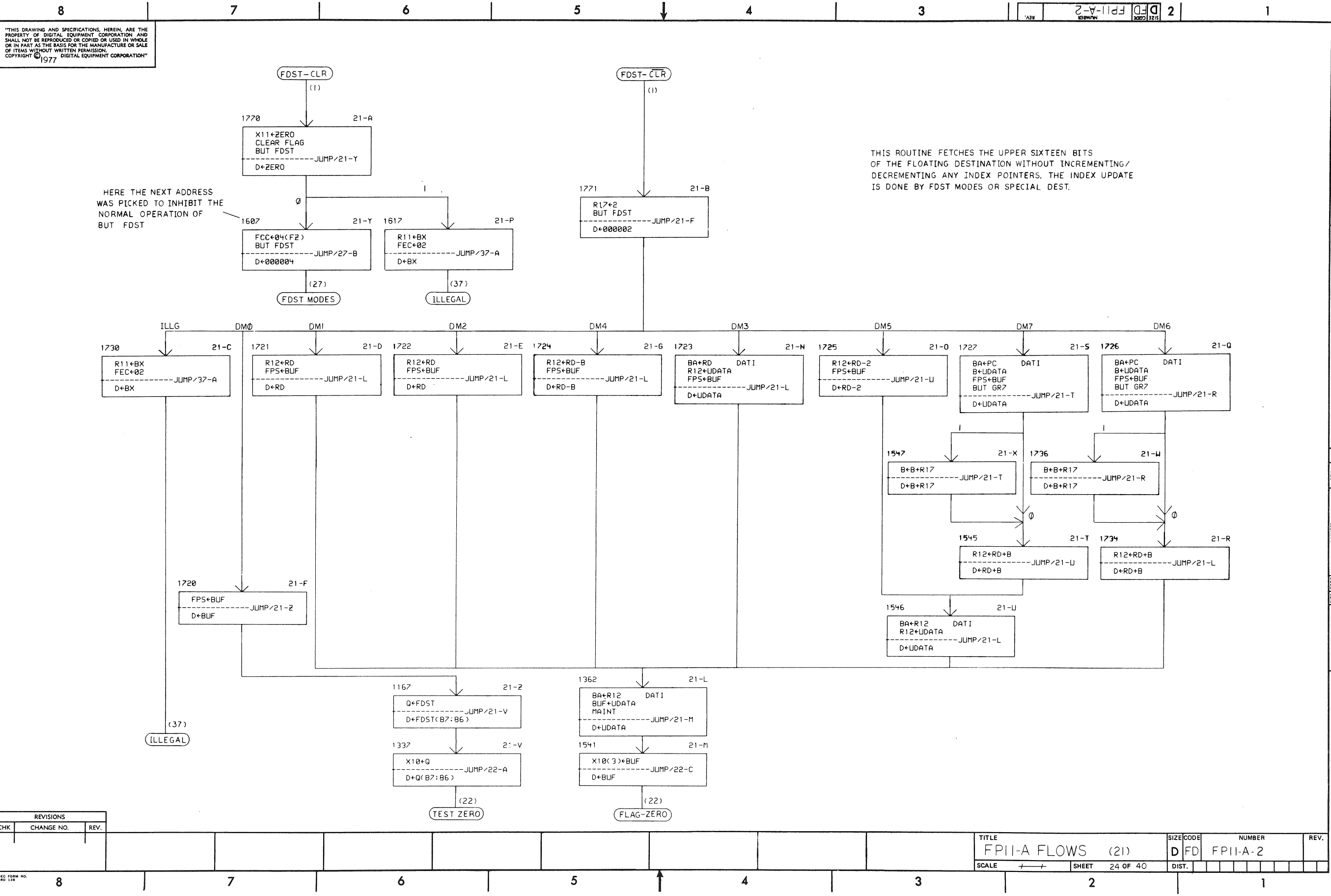
DIST.



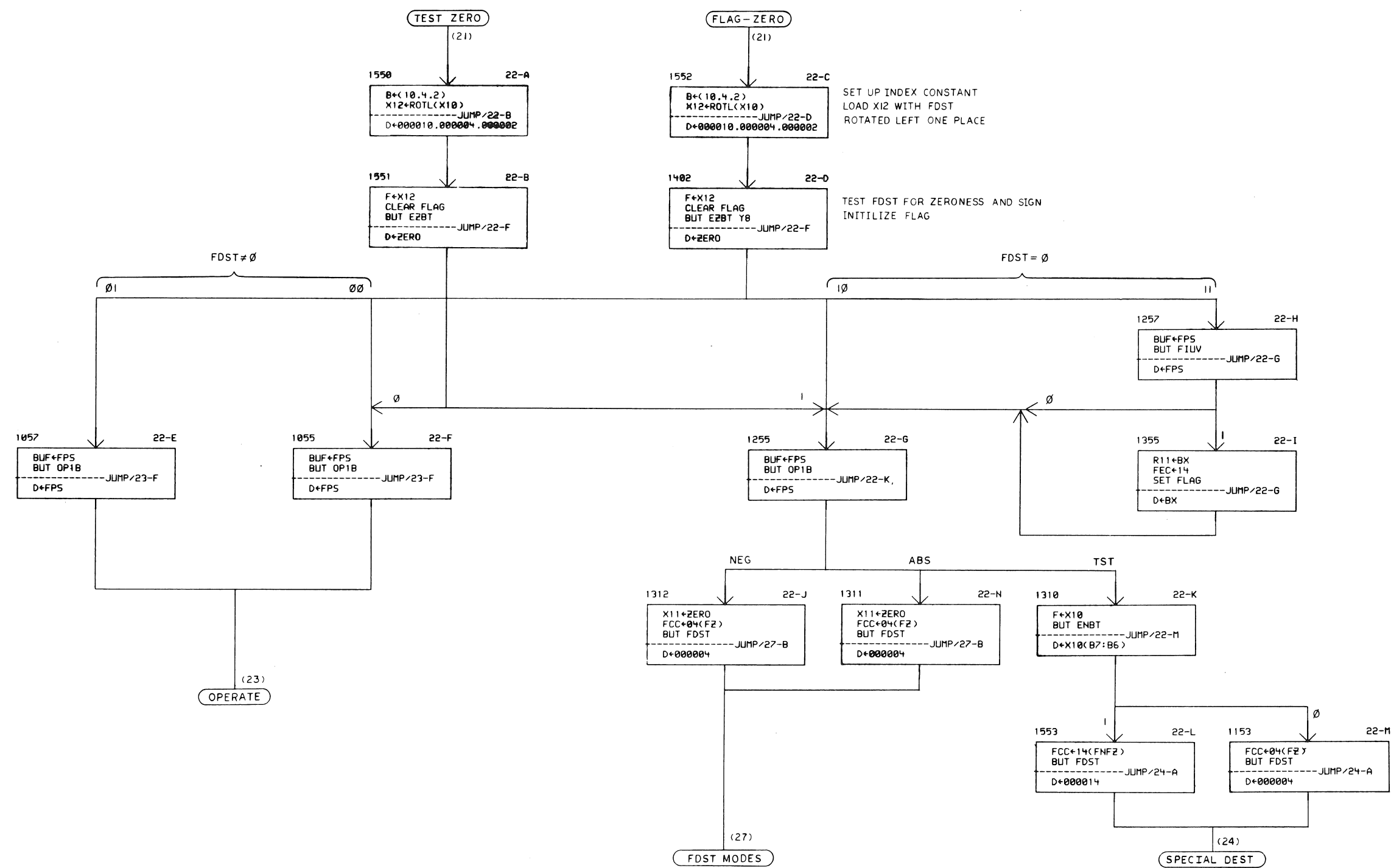
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REVISIONS		
CHK	CHANGE NO.	REV.



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REVISIONS		
CHK	CHANGE NO.	REV.

D

C

B

A



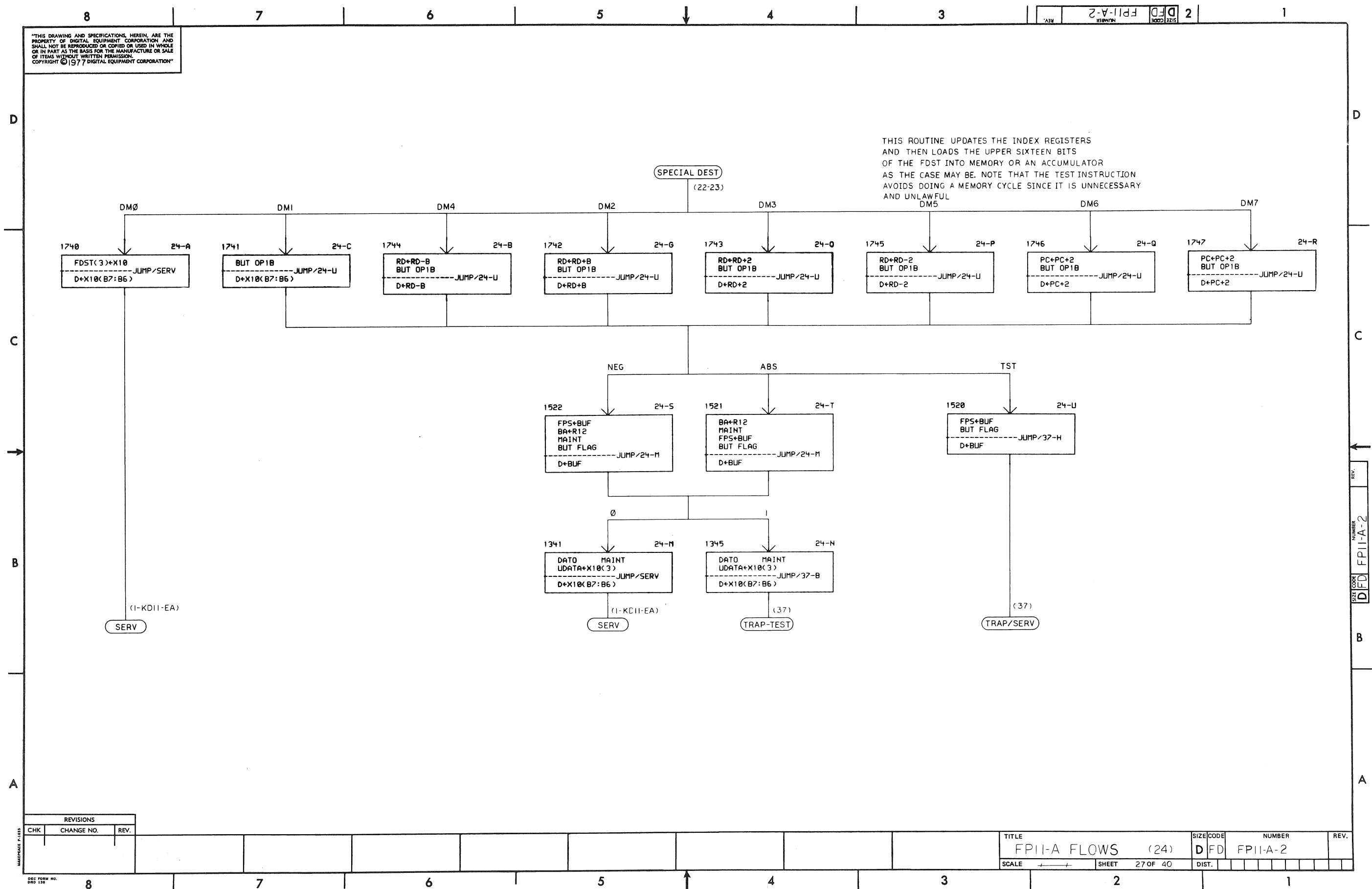
C

B.

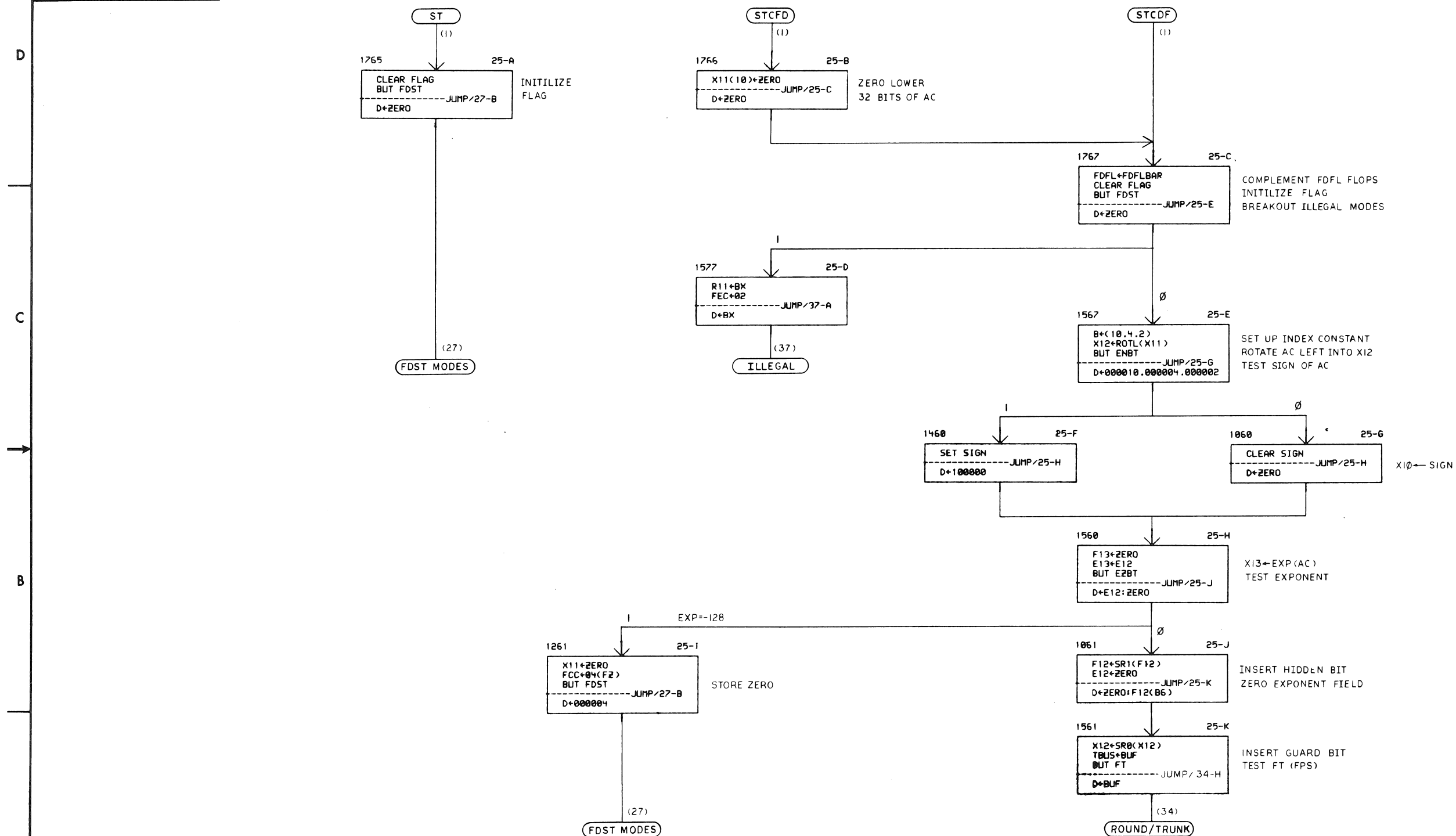
La

SIZE	CODE	NUMBER	REV.
D	ED	ED 1 A 3	

SIZE	CODE	NUMBER			
D	FD	FPII-A-2			
DIST.					



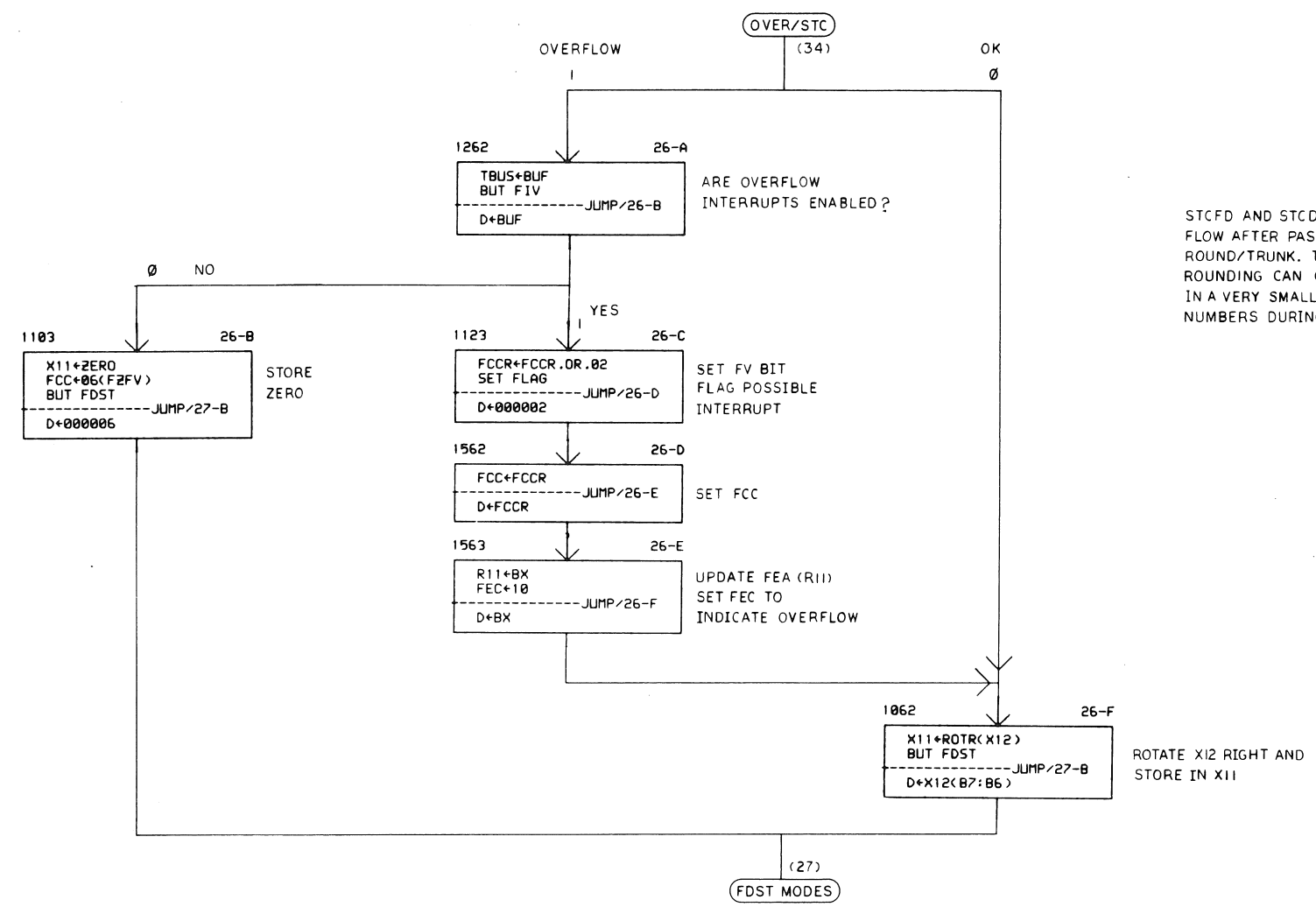
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REVISIONS		
CHK	CHANGE NO.	REV.

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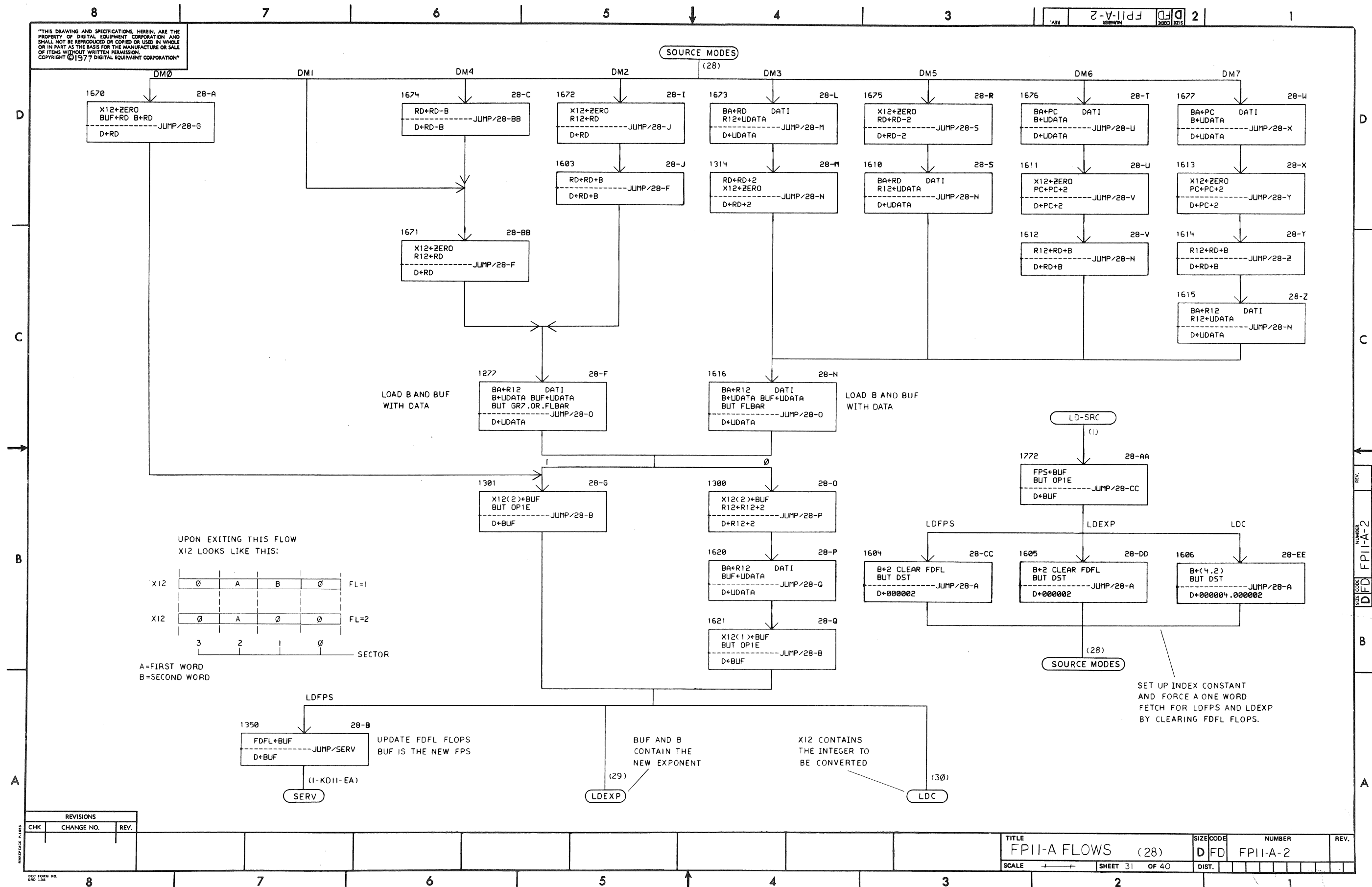
SIZE CODE D FD FPII-A-2 2

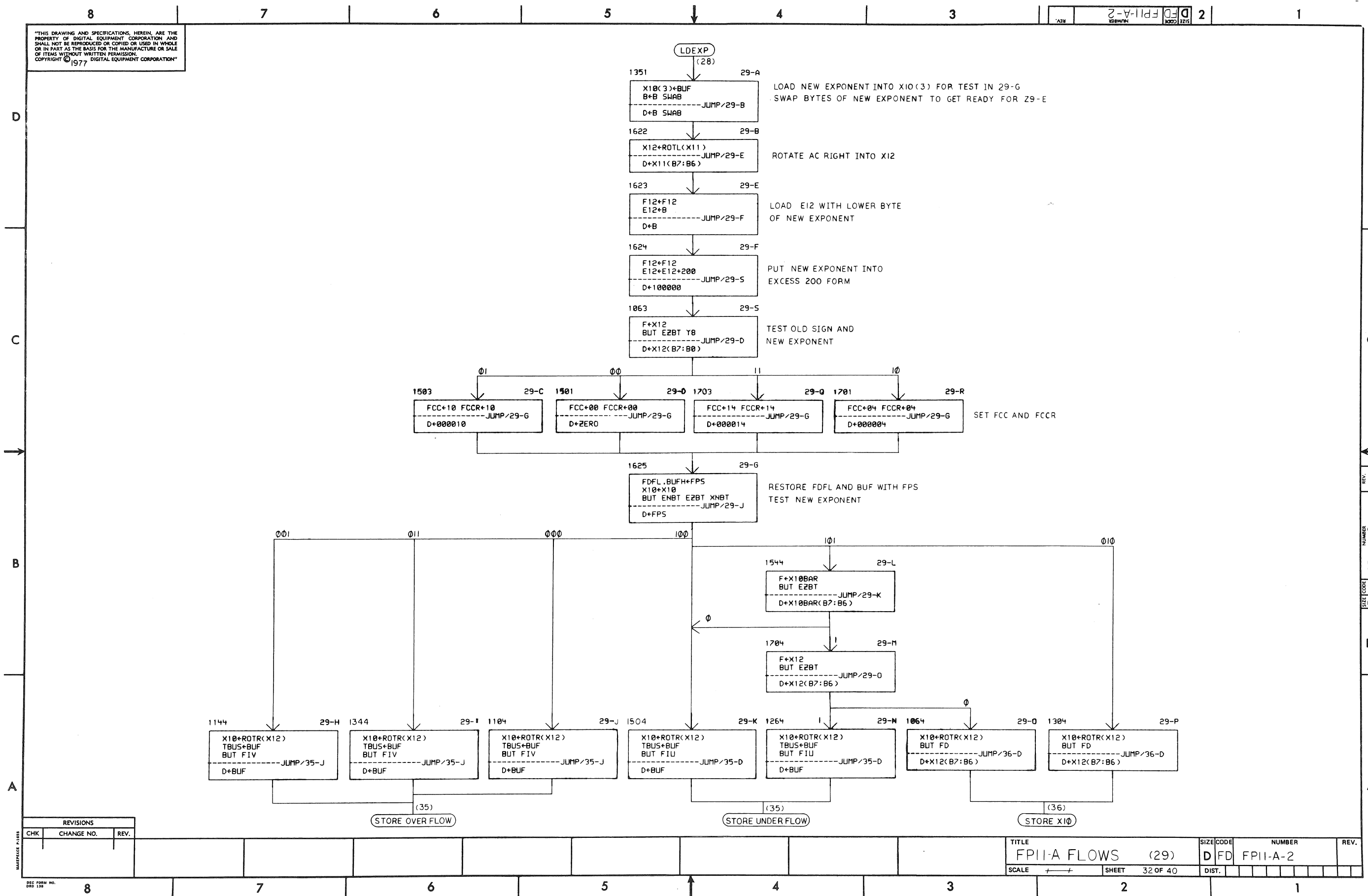


STCFD AND STCDF ENTER THIS FLOW AFTER PASSING THROUGH ROUND/TRUNK. THE PROCESS OF ROUNDING CAN CAUSE AN OVERFLOW IN A VERY SMALL CLASS OF VERY LARGE NUMBERS DURING STCDF (PROBABILITY = $\frac{1}{\infty}$)

REVISIONS		
CHK	CHANGE NO.	REV.

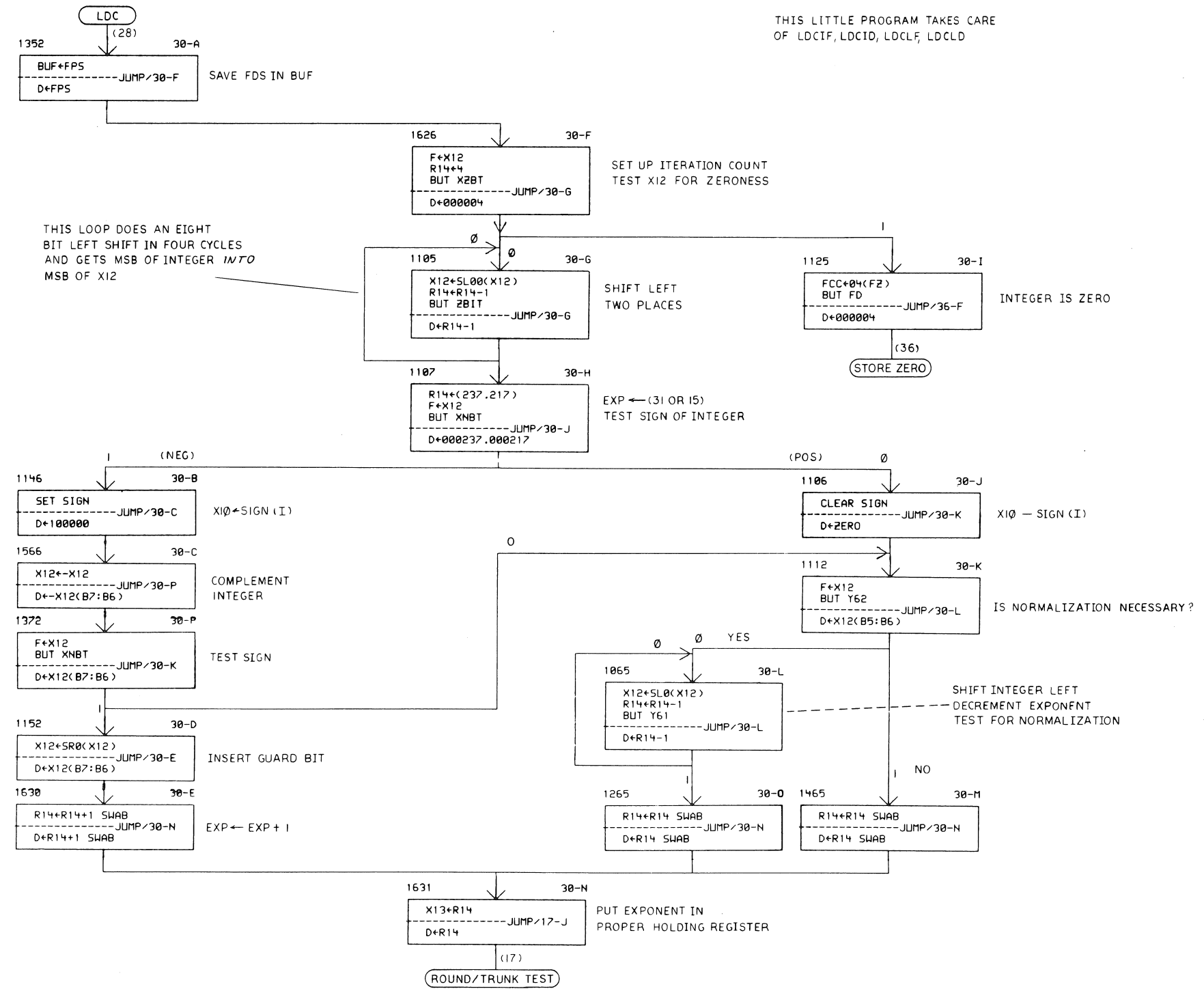
TITLE		SIZE CODE	NUMBER	REV.
FPII-A FLOWS (26)		D FD	FPII-A-2	
SCALE	SHEET	DIST.		
	29 OF 40			





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THIS LITTLE PROGRAM TAKES CARE OF LDCIF, LDCID, LDCIF, LDCID

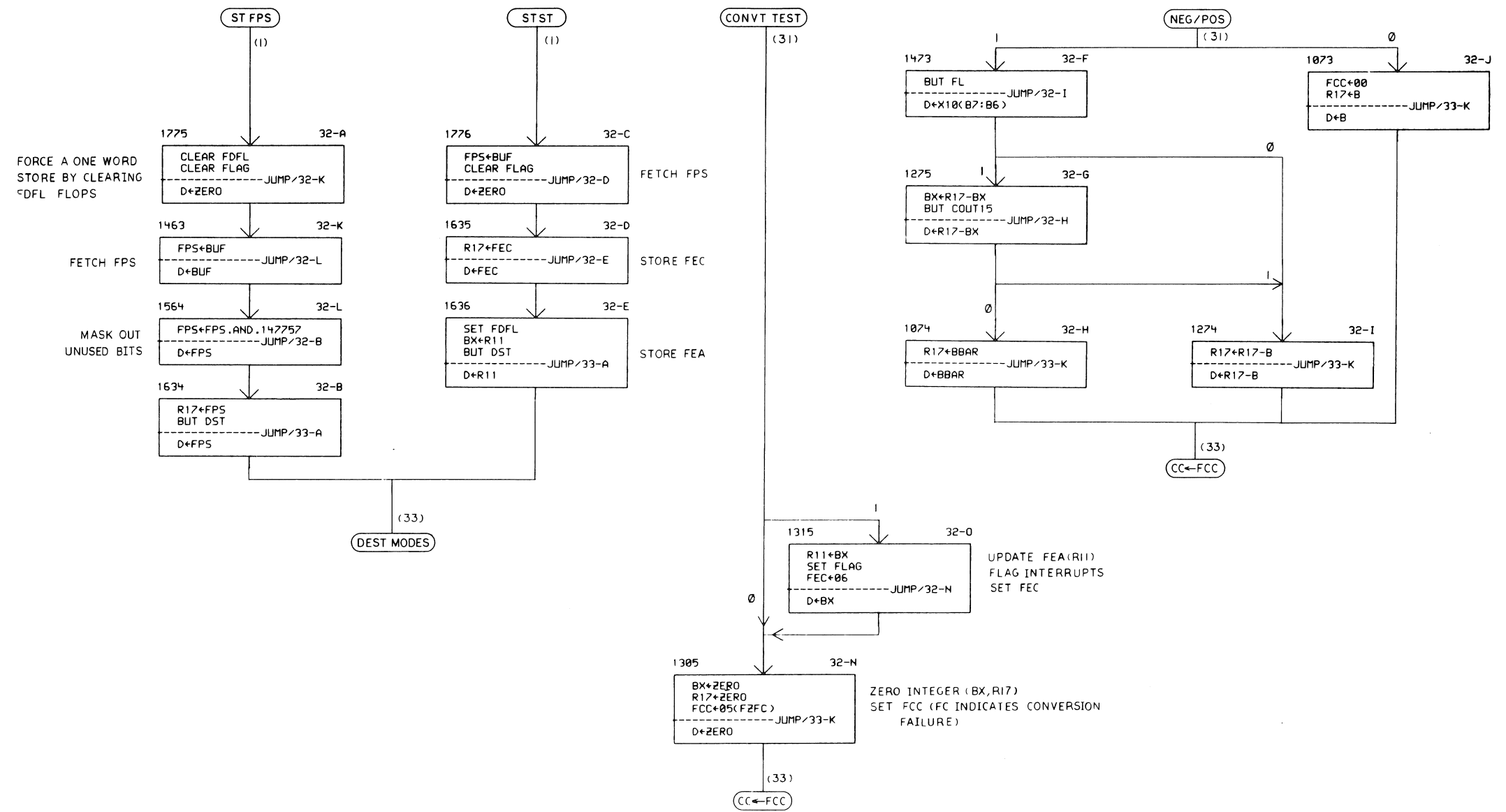


INTEGER IS MOST NEGATIVE NUMBER
 $I = 2^{15}$ OR 2^{31}

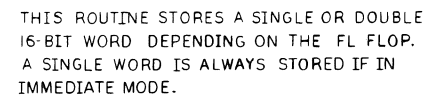
REVISIONS		
CHK	CHANGE NO.	REV.

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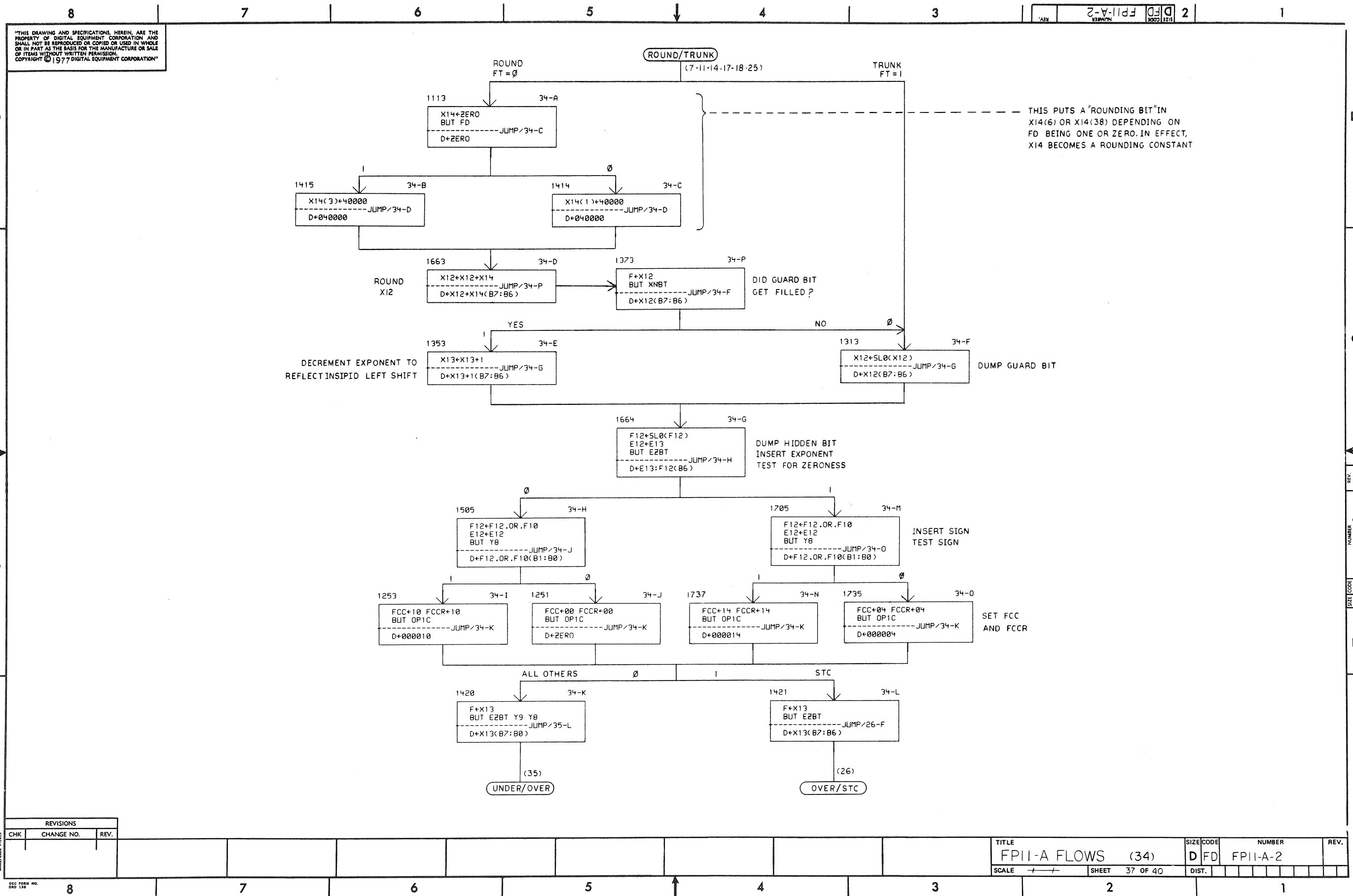
UPON ENTERING THIS ROUTINE, THE INTEGER
IS IN B AND BX, RI7 CONTAINS ZERO.
THE INTEGER IS COMPLEMENTED (IF NECESSARY)
AND STORED IN RI7 AND BX.



REVISIONS		
CHK	CHANGE NO.	REV.



TITLE FPII-A FLOWS (33)		SIZE D	CODE FD	NUMBER FPII-A-2		REV
SCALE 1" = 10'	SHEET 36 OF 40	DIST.				



REVISIONS													TITLE		SIZE CODE		NUMBER		REV.
CHK	CHANGE NO.	REV.											FPII-A FLOWS (34)		D	FD	FPII-A-2		
													SCALE		SHEET		37 OF 40		
													DIST.						

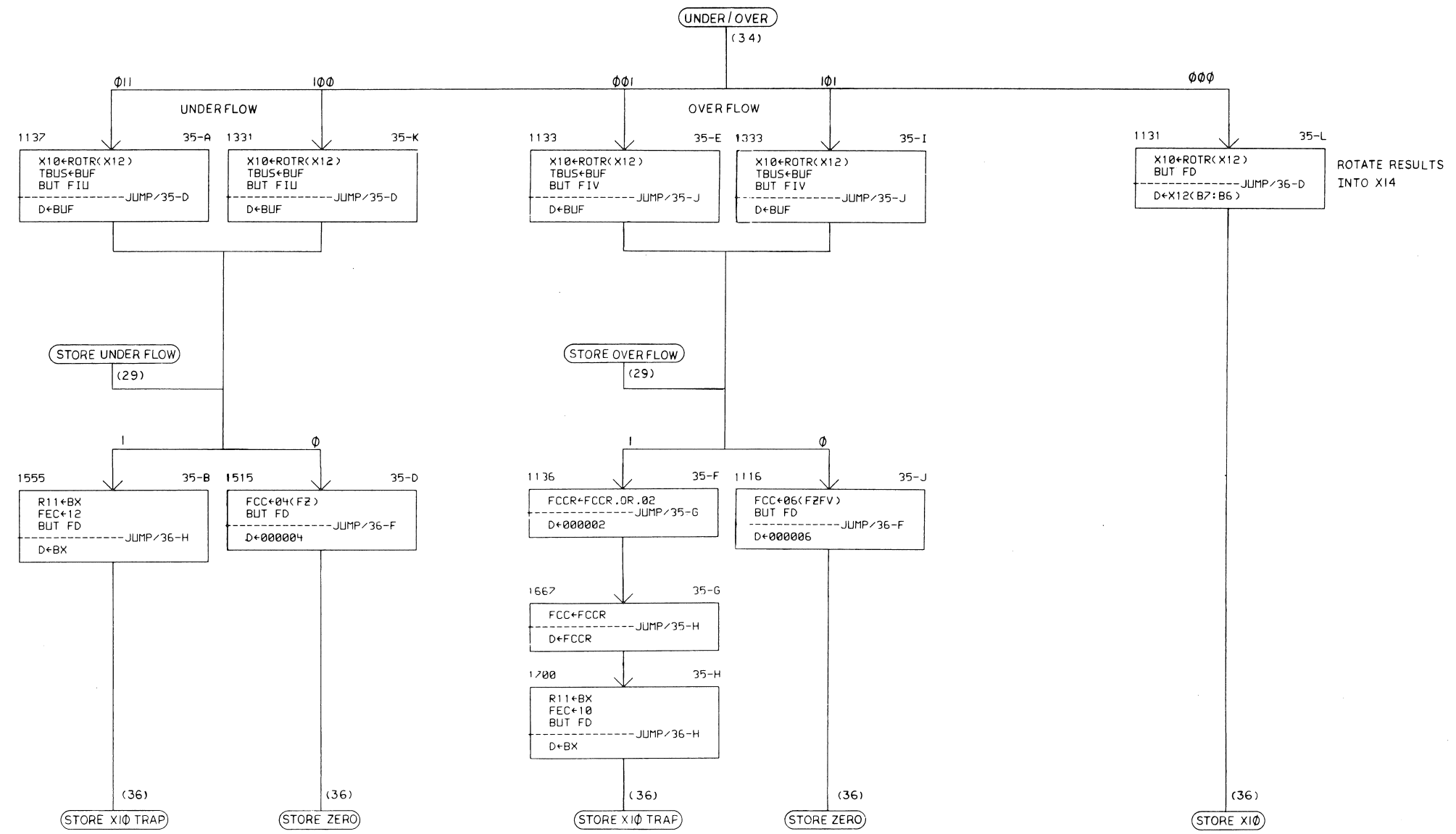
8			7			6			5			4			3			2			1		
---	--	--	---	--	--	---	--	--	---	--	--	---	--	--	---	--	--	---	--	--	---	--	--

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REV. 2
SIZE CODE DFD
NUMBER FPII-A-2

D
C
B
A

D
C
B
A



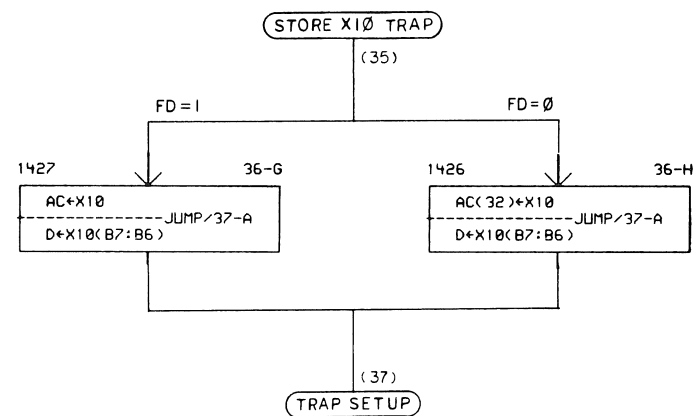
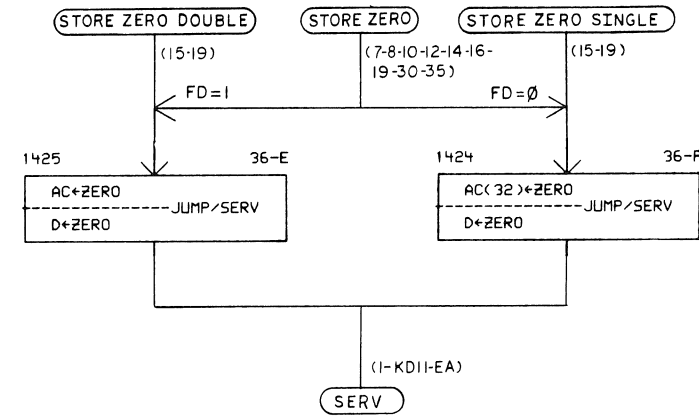
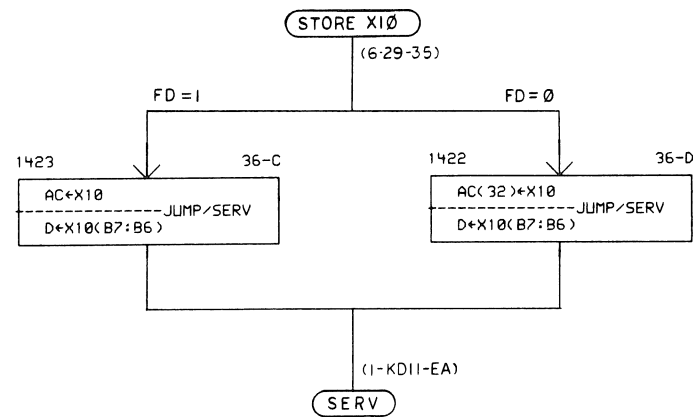
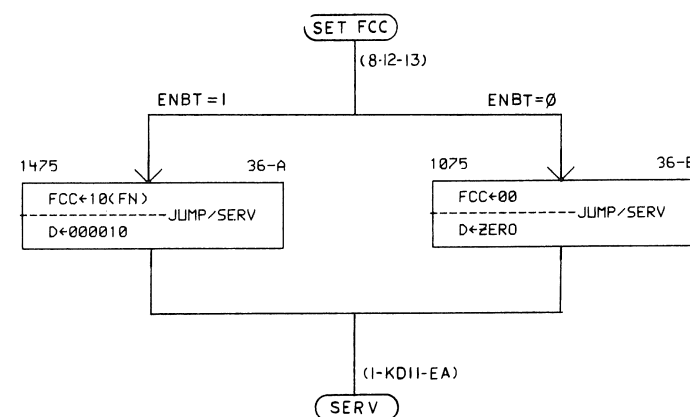
REVISIONS		
CHK	CHANGE NO.	REV.

DEC FORM NO. 130

TITLE FPII-A FLOWS (35)
SCALE + + +
SHEET 38 OF 40
SIZE CODE DFD
NUMBER FPII-A-2
REV.

8 7 6 5 4 3 2 1

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REVISIONS		
CHK	CHANGE NO.	REV.

TITLE FPII A FLOWS (36)				SIZE/CODE D FD		NUMBER FPII-A-2				REV.	
SCALE 1" = 1'-0"		SHEET 39 OF 40		DIST.							

```

graph TD
    ILLEGAL([ILLEGAL  
(2-3-4-21-25-27)]) -- 37-A --> Node37A[1702  
FPS+BUF  
-----  
D+BUF  
-----  
JUMP/37-B]
    TRAPSETUP([TRAP SETUP  
(37)]) -- 37-A --> Node37A
    TRAPTEST([TRAP/TEST  
(10-18-24)]) -- I --> Node37B[1365  
FPS+FPS,OR,100000  
-----  
D+FPS  
-----  
JUMP/37-C]
    TRAPSERV([TRAP/SERV  
(24-27-33)]) -- 0 --> Node37H[1361  
FDL.BUF+FPS  
-----  
D+FPS  
-----  
JUMP/SERV]
    
    Node37A --> Node37B
    Node37B --> Node37C[1531  
FDL.BUF+FPS  
BUT FID  
-----  
D+FPS  
-----  
JUMP/37-E]
    Node37C -- I --> Node37D[1432  
R11+R11-2  
-----  
D+R11-2  
-----  
JUMP/SERV]
    Node37C -- 0 --> Node37E[1430  
R11+R11-2  
-----  
D+R11-2  
-----  
JUMP/37-F]
    Node37E --> Node37F[1732  
B+244  
-----  
D+000244  
-----  
JUMP/TRAP]
    Node37D -- (I-KD11-EA) --> SERV1([SERV])
    Node37F -- (I-KD11-EA) --> TRAP([TRAP])
    Node37H -- (I-KD11-EA) --> SERV2([SERV])
  
```

Legend:

IOPT	CODE	DESCRIPTION
0	0	NO I/O
1	1	NO I/O
2	2	NO I/O
3	3	NO I/O
4	4	NO I/O
5	5	NO I/O
6	6	NO I/O
7	7	NO I/O
8	8	NO I/O
9	9	NO I/O
10	10	NO I/O
11	11	NO I/O
12	12	NO I/O
13	13	NO I/O
14	14	NO I/O
15	15	NO I/O
16	16	NO I/O
17	17	NO I/O
18	18	NO I/O
19	19	NO I/O
20	20	NO I/O
21	21	NO I/O
22	22	NO I/O
23	23	NO I/O
24	24	NO I/O
25	25	NO I/O
26	26	NO I/O
27	27	NO I/O
28	28	NO I/O
29	29	NO I/O
30	30	NO I/O
31	31	NO I/O
32	32	NO I/O
33	33	NO I/O
34	34	NO I/O
35	35	NO I/O
36	36	NO I/O
37	37	NO I/O
38	38	NO I/O
39	39	NO I/O
40	40	NO I/O
41	41	NO I/O
42	42	NO I/O
43	43	NO I/O
44	44	NO I/O
45	45	NO I/O
46	46	NO I/O
47	47	NO I/O
48	48	NO I/O
49	49	NO I/O
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51	51	NO I/O
52	52	NO I/O
53	53	NO I/O
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60	60	NO I/O
61	61	NO I/O
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63	63	NO I/O
64	64	NO I/O
65	65	NO I/O
66	66	NO I/O
67	67	NO I/O
68	68	NO I/O
69	69	NO I/O
70	70	NO I/O
71	71	NO I/O
72	72	NO I/O
73	73	NO I/O
74	74	NO I/O
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76	76	NO I/O
77	77	NO I/O
78	78	NO I/O
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81	81	NO I/O
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83	83	NO I/O
84	84	NO I/O
85	85	NO I/O
86	86	NO I/O
87	87	NO I/O
88	88	NO I/O
89	89	NO I/O
90	90	NO I/O
91	91	NO I/O
92	92	NO I/O
93	93	NO I/O
94	94	NO I/O
95	95	NO I/O
96	96	NO I/O
97	97	NO I/O
98	98	NO I/O
99	99	NO I/O

DEC FORM 100
OBD 120

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**UNIT VARIATIONS
COVERED BY THIS
PRINT SET**

[illegible]

REVISIONS			USED ON OPTION/MODEL	DRN.	DATE	TITLE: <div>digital</div> <div>FP11-A</div>										
DATE	CHG. NO.	REV.			CHK'D	DATE	<div>FLOW DIAGRAMS</div>									
					PROJ. ENG. <th>DATE</th> <th>SIZE</th> <th>CODE</th> <th colspan="4">NUMBER</th> <th>REV.</th>	DATE	SIZE	CODE	NUMBER				REV.			
					FIELD SERV. <th>DATE</th> <th>B</th> <th>FD</th> <th colspan="4">FP11-A-5</th> <td></td>	DATE	B	FD	FP11-A-5							
							DIST.									
				SHEET I OF 8												

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MICRO FIELD DEFINITIONS

FCTL/=3,6,53,D

A.AND.B=41
D.AND.A=45
A.OR.B=31
D.OR.A=35
D.XOR.A=65
BBAR=73
QPASS=62
BPASS=63
APASS=64
DPASS=67
ZERO=42
ABAR.AND.B=51
DBAR.AND.A=55
A+B=1
D+A=5
BPLUS=3
B-1=13
-B-1=23
B-A-1=11
A-D-1=15
A-B-1=21
D-A-1=25

ECTL/=3,6,59,D

A.AND.B=41
D.AND.A=45
D.OR.A=35
A.XOR.B=61
D.XOR.A=65
BBAR=73
QPASS=62
BPASS=63
APASS=64
DPASS=67
ZERO=42
ABAR.AND.B=51
DBAR.AND.A=55
A+B=1
D+A=5
BPLUS=3
B-1=13
-B-1=23
B-A-1=11
A-D-1=15
A-B-1=21
D-A-1=25

ECIN/=0,1,60,D

ZERO=0
ONE=1

BSEL/=3,2,62,D

AC.OR.1=0
FDST=1
FSRC=1
AC=2
BROM=3

ASEL/=1,1,63,D

AC=0
AROM=1

TOUT/=1,1,64,D

NOP=0
1134_TBUS=1

DCTL/=0,4,68,D

NOP=0
LDBT=1
LDBF=2
LDQF=3
ROTL=4
ROTR=5
SLALU0=6
SROALU=7
SR1ALU=10
SLALU0.LDBF=11
SR1ALU.LDBF=12
SROALUQ=14
SLALU0Q=15

RET/=1,1,69,D

RETURN=0
STAY=1

BUT/=0,6,75,D

NOP=0
ENBT=54
EZBT=52
BUSRQ=55
FNBT=56
XZBT=57
Q8.Q40=60
COUT63=61
EZBT.OP1A=13
FID=41
EZBT.Y8.Y9=62
EZBT.Y8=63
ENBT.Y8=64
ENBT.EZBT.FNBT=65
FNBT.XZBT=66
FIV=42
Y62=43
FIU=45
FIUV=46
FIC=47
FT=44
ENBT.EZBT=67
Y8=50
Y61=44
FD.FIV=2
Y62.OP1A=3
BREAKOUT=31
FD=32
OP1B=34
OP1C=35
OP1D=36
OP1E=37
FDST=71
FSRC=71
DST=72
SRC=72
GR7=73
GR7.FLBAR=74
FL=75
FLBAR=76
OP2A=77

CONST/=10,6,81,D

NOP=0
ZERO=53
ONES=40
OCT2=41
OCT5=42
OCT4=43
OCT6=44
OCT10=45
OCT12=46
OCT14=47
OCT100=50
OCT200=51
OCT100000=60
OCT40000=61
OCT147757=63
(143.159)=62
OCT10.4.2=64
OCT4.2=65
FDFLBAR=66
OCT4.10.2=67
(56.24)=55
(57.25)=56
(58.26)=57
OCT244=52
(31.15)=54
(56.24)*=70
OCT170000=71
BYTE10=3
BYTE32=4
BYTE43=5
BYTE54=6
BYTE65=7
BYTE76=10
BYTE07=11

MISC/=11,4,85,D

TBUS_1134=0
TBUS_BUF=1
BUF_TBUS=4
BUF_1134=5
FDFL_TBUS=6
FCC_TBUS=7
SERV.BR=10
NOP=11
FDFL_BUF=12
FDFL_BUF_TBUS=13
FDFL_BUFH_TBUS=15

TITLE FPII-A
FLOW DIAGRAMS

SHEET 2 OF 8

SIZE CODE BFD
NUMBER FPII-A-5

REV

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AROM/=0,3,88,D

AR10=0
AR11=1
AR12=2
AR13=3
AR14=4
FCCR=6
FPS=7

BROM/=0,3,91,D

BR10=0
BR11=1
BR12=2
BR13=3
BR14=4
FEC=5
FCCR=6
FPS=7

SECT/=17,4,95,D

S1=1
S2=2
S3=3
S4=4
S7=7
S10=10
S14=14
S17=17

RSFA/=0,4,47,D

PC=10
R11=6
R12=5
R14=3
R17=0

FORCE KER/=0,1,43,D

KER=1

BUT SERV/=0,1,42,D

SERV=1

PREVIOUS MODE/=1,1,41,D

ASSERT=0

FORCE RS+1/=1,1,40,D

RS+1=0

DST SEL/=3,2,39,D

RD=2
ROM=0

SRC SEL/=0,2,37,D

RD=2
ROM=0
RBA=3

BUT BITS/=0,4,35,D

NOP=0
NBIT=1
ZBIT=2
C05=3
COUT=7
NBITZBIT=11
NOSERV=17

AMUX/=1,2,31,D

UBUS=3
ALU=1

SSMUX/=0,2,29,D

STRT=0
SWAB=2

BBX CTRL/=0,4,27,D

HOLD=0
LOADB=1
LOADBX=2

ALU BLEG/=5,5,23,D

ZERO=0
A+1=2
A-1=3
A-B=4
A=5
B=6
A+B=10
A-BX=22
A+2=24
A-2=25
BX=27
BBAR=30

AUX CTRL/=0,1,18,D

AUX=1

CYCLE/=1,1,17,D

SHORT=1
LONG=0

LOAD BA/=0,1,16,D

BA=1

ENAB MAINT/=0,1,15,D

MAINT=1

BUS CTRL/=0,2,14,D

DATI=0
DATO=2

DATA TRAN/=0,1,12,D

TRAN=1

MISC CTRL/=0,3,11,D

NOP=0
LOADCC=3
LOADC=6
COUNT=7

J/=0,9,8,+

TITLE FPII-A
FLOW DIAGRAMS

SHEET 3 OF 8

SIZE CODE
BFD

NUMBER
FPII-A-5

REV

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FP11A MACRO DEFINITIONS

AC(32)_X10	"FCTL/APASS,ECTL/APASS,DCTL/LDBF,BSEL/AC,AROM/AR10,SECT/S14"
AC(32)_ZERO	"FCTL/ZERO,ECTL/ZERO,DCTL/LDBF,BSEL/AC,SECT/S14"
AC.OR.1(32)_X12	"FCTL/APASS,ECTL/APASS,DCTL/LDBF,BSEL/AC.OR.1,AROM/AR12,SECT/S14"
AC.OR.1(32)_X14	"FCTL/APASS,ECTL/APASS,DCTL/LDBF,BSEL/AC.OR.1,AROM/AR14,SECT/S14"
AC.OR.1(32)_ZERO	"FCTL/ZERO,ECTL/ZERO,DCTL/LDBF,BSEL/AC.OR.1,SECT/S14"
AC.OR.1_X12	"FCTL/APASS,ECTL/APASS,DCTL/LDBF,BSEL/AC.OR.1,AROM/AR12"
AC.OR.1_X14	"FCTL/APASS,ECTL/APASS,DCTL/LDBF,BSEL/AC.OR.1,AROM/AR14"
AC.OR.1_ZERO	"FCTL/ZERO,ECTL/ZERO,DCTL/LDBF,BSEL/AC.OR.1"
AC_X10	"FCTL/APASS,ECTL/APASS,DCTL/LDBF,BSEL/AC,AROM/AR10"
AC_ZERO	"FCTL/ZERO,ECTL/ZERO,DCTL/LDBF,BSEL/AC"
BA_PC	"LOAD BA/BA,RSPA/PC"
BA_R12	"LOAD BA/BA,RSPA/R12"
BA_R12 R12_R12+2	"LOAD BA/BA,DST SEL/ROM,RSPA/R12,ALU BLEG/A+2,TOUT/NOP"
BA_RD	"LOAD BA/BA,SRC SEL/RD"
BUF_FPS	"FCTL/BPASS,ECTL/BPASS,CONST/BYTE10,MISC/BUF_TBUS,BROM/FPS"
BUF_RD B_RD	"MISC/BUF_1134,BBX CTRL/LOADB,SRC SEL/RD,TOUT/NOP,CONST/NOP"
BUF_UDATA	"MISC/BUF_1134,AMUX/UBUS,TOUT/NOP,CONST/NOP"
BUT (Q8.Q40)	"BUT/Q8.Q40,CYCLE/LONG"
BUT (Q8.Q40) ZBIT	"BUT/Q8.Q40,BUT BITS/ZBIT,CYCLE/LONG"
BUT BR.OR.PFAIL	"BUT/BUSRQ,CYCLE/LONG"
BUT BREAKOUT	"BUT/BREAKOUT"
BUT COUT15	"BUT BITS/COUT,CYCLE/LONG"
BUT COUT63 ZBIT	"BUT/COUT63,BUT BITS/ZBIT,CYCLE/LONG"
BUT DST	"BUT/DST"
BUT ENBT	"BUT/ENBT,CYCLE/LONG"
BUT ENBT EZBT	"BUT/ENBT.EZBT,CYCLE/LONG"
BUT ENBT EZBT XNBT	"BUT/ENBT.EZBT.FNBT,CYCLE/LONG"
BUT ENBT Y8	"BUT/ENBT.Y8,CONST/BYTE07,CYCLE/LONG"
BUT EZBT	"BUT/EZBT,CYCLE/LONG"
BUT EZBT OP1A	"BUT/EZBT.OP1A,CYCLE/LONG"
BUT EZBT Y8	"BUT/EZBT.Y8,CONST/BYTE07,CYCLE/LONG"
BUT EZBT Y9 Y8	"BUT/EZBT.Y8.Y9,CONST/BYTE07,CYCLE/LONG"
BUT FD	"BUT/FD"
BUT FDST	"BUT/FDST"
BUT FIC	"BUT/FIC,CYCLE/LONG"
BUT FID	"BUT/FID,CYCLE/LONG"
BUT FIU	"BUT/FIU,CYCLE/LONG"
BUT FIUV	"BUT/FIUV,CYCLE/LONG"
BUT FIV	"BUT/FIV,CYCLE/LONG"
BUT FIV FD	"BUT/FD.FIV,CYCLE/LONG"
BUT FL	"BUT/FL"
BUT FLAG	"BUT BITS/C05"
BUT FLBAR	"BUT/FLBAR"
BUT FSRC	"BUT/FSRC"
BUT FT	"BUT/FT,CYCLE/LONG"
BUT GR7	"BUT/GR7"
BUT GR7.OR.FLBAR	"BUT/GR7.FLBAR"
BUT NBIT	"BUT BITS/NBIT,CYCLE/LONG"
BUT NBIT ZBIT	"BUT BITS/NBITZBIT,CYCLE/LONG"
BUT NOSERV	"BUT BITS/NOSERV"
BUT OP1B	"BUT/OP1B"
BUT OP1C	"BUT/OP1C"
BUT OP1D	"BUT/OP1D"

TITLE

FP11-A FLOWS

SIZE CODE

B FD

NUMBER

FP11-A-5

REV

SHEET 4 OF 8

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BUT OP1E	"BUT/OP1E"
BUT OP2A	"BUT/OP2A"
BUT SERV(BR.OR.PFAIL)	"BUT SERV/SERV,MISC/SERV.BR"
BUT SRC	"BUT/SRC"
BUT XNBT	"BUT/FNBT,CYCLE/LONG"
BUT XNBT XZBT	"BUT/FNBT,XZBT,CYCLE/LONG"
BUT XZBT	"BUT/XZBT,CYCLE/LONG"
BUT Y61	"BUT/Y61,CONST/BYTE65,CYCLE/LONG"
BUT Y62	"BUT/Y62,CONST/BYTE65,CYCLE/LONG"
BUT Y62 OP1A	"BUT/Y62.OP1A,CONST/BYTE65,CYCLE/LONG"
BUT Y8	"BUT/Y8,CONST/BYTE10,CYCLE/LONG"
BUT ZBIT	"BUT BITS/ZBIT,CYCLE/LONG"
BX_R11	"BBX CTRL/LOADBX,RSPA/R11,TOUT/NOP"
BX_R14	"BBX CTRL/LOADBX,RSPA/R14,TOUT/NOP"
BX_R17-BX	"BBX CTRL/LOADBX,RSPA/R17,ALU BLEG/A-BX,TOUT/NOP"
BX_X11(L) SWAB	"FCTL/BPASS,ECTL/BPASS,CONST/BYTE43,BROM/BR11,BBX CTRL/LOADBX,SSMUX/SWAB"
BX_X11(L) SWAB F_EAC	"FCTL/BPASS,ECTL/APASS,ASEL/AC,CONST/BYTE43,BROM/BR11,BBX CTRL/LOADBX,SSMUX/SWAB"
BX_ZERO	"BBX CTRL/LOADBX,ALU BLEG/ZERO,TOUT/NOP"
B_(10.4.2)	"CONST/OCT10.4.2,BBX CTRL/LOADB"
B_(4.10.2)	"CONST/OCT4.10.2,BBX CTRL/LOADB"
B_(4.2)	"CONST/OCT4.2,BBX CTRL/LOADB"
B_2 CLEAR FDFL	"CONST/OCT2,MISC/FDFL_TBUS,BBX CTRL/LOADB"
B_244	"CONST/OCT244,BBX CTRL/LOADB"
B_B SWAB	"BBX CTRL/LOADB,ALU BLEG/B,SSMUX/SWAB,TOUT/NOP"
B_B+R17	"DST SEL/ROM,RSPA/R17,ALU BLEG/A+B,BBX CTRL/LOADB,TOUT/NOP"
B_R17	"BBX CTRL/LOADB,RSPA/R17,TOUT/NOP"
B_UDATA	"BBX CTRL/LOADB,AMUX/UBUS,TOUT/NOP"
B_UDATA BUF_UDATA	"BBX CTRL/LOADB,AMUX/UBUS,MISC/BUF_1134,TOUT/NOP,CONST/NOP"
B_X11(H) SWAB	"FCTL/BPASS,ECTL/BPASS,CONST/BYTE65,BROM/BR11,BBX CTRL/LOADB,SSMUX/SWAB"
B_X11(H) SWAB F_EAC	"FCTL/BPASS,ECTL/APASS,ASEL/AC,CONST/BYTE65,BROM/BR11,BBX CTRL/LOADB,SSMUX/SWAB"
B_X13-X14 SWAB	"BBX CTRL/LOADB,FCTL/A-B-1,ECTL/A-B-1,ECIN/ONE,CONST/BYTE07,AROM/AR13,BROM/BR14,SSMUX/SWAB,CYCLE/LONG"
B_X14-X13 SWAB	"BBX CTRL/LOADB,FCTL/B-A-1,ECTL/B-A-1,ECIN/ONE,CONST/BYTE07,AROM/AR13,BROM/BR14,SSMUX/SWAB,CYCLE/LONG"
CC_FCC	"MISC/TBUS_BUF,MISC CTRL/LOADCC,CONST/NOP"
CLEAR FD(FPS)	"FCTL/DBAR.AND.A,ECTL/DBAR.AND.A,DCTL/LDBF,CONST/OCT200,AROM/FPS,BROM/FPS"
CLEAR FDFL	"CONST/ZERO,MISC/FDFL_TBUS"
CLEAR FL(FPS)	"FCTL/DBAR.AND.A,ECTL/DBAR.AND.A,DCTL/LDBF,CONST/OCT100,AROM/FPS,BROM/FPS"
CLEAR FLAG	"MISC CTRL/LOADC,ALU BLEG/ZERO,TOUT/NOP"
CLEAR SIGN	"FCTL/ZERO,ECTL/ZERO,DCTL/LDBF,BROM/BR10"
CLEAR SIGN T_X12	"FCTL/ZERO,ECTL/ZERO,DCTL/LDBT,AROM/AR12,BROM/BR10"
DATI	"DATA TRAN/TRAN"
DATO	"DATA TRAN/TRAN,BUS CTRL/DATO,CYCLE/LONG"
F10_F10 E10_E10.AND.177	"FCTL/BPASS,ECTL/DBAR.AND.A,DCTL/LDBF,CONST/OCT100000,AROM/AR10,BROM/BR10"
F10_F10 E10_E10.XOR.200	"FCTL/BPASS,ECTL/D.XOR.A,DCTL/LDBF,CONST/OCT100000,AROM/AR10,BROM/BR10"
F11_SR1(F11) E11_E11	"FCTL/BPASS,ECTL/BPASS,DCTL/SR1ALU,LDBF,BROM/BR11"
F11_SR1(F11) E11_ZERO	"FCTL/BPASS,ECTL/ZERO,DCTL/SR1ALU,LDBF,BROM/BR11"
F12_F12 E12_B	"FCTL/BPASS,ECTL/DPASS,DCTL/LDBF,MISC/TBUS_1134,BROM/BR12,ALU BLEG/B,TOUT/NOP,CONST/NOP"
F12_F12 E12_E12+200	"FCTL/BPASS,ECTL/D+A,DCTL/LDBF,CONST/OCT100000,AROM/AR12,BROM/BR12,CYCLE/LONG"
F12_F12 E12_E12.AND.360	"FCTL/BPASS,ECTL/D.AND.A,DCTL/LDBF,CONST/OCT170000,AROM/AR12,BROM/BR12"
F12_F12.OR.F10 E12_E12	"FCTL/A.OR.B,ECTL/BPASS,DCTL/LDBF,AROM/AR10,BROM/BR12"
F12_SLO(F12) E12_E13	"FCTL/BPASS,ECTL/APASS,DCTL/SLALU0,LDBF,AROM/AR13,BROM/BR12"
F12_SR1(F12) E12_ZERO	"FCTL/BPASS,ECTL/ZERO,DCTL/SR1ALU,LDBF,BROM/BR12"
F13_ZERO E13_E11	"FCTL/ZERO,ECTL/APASS,DCTL/LDBF,AROM/AR11,BROM/BR13"
F13_ZERO E13_E11.XOR.200	"FCTL/ZERO,ECTL/D.XOR.A,DCTL/LDBF,CONST/OCT100000,AROM/AR11,BROM/BR13"
F13_ZERO E13_E12	"FCTL/ZERO,ECTL/APASS,DCTL/LDBF,AROM/AR12,BROM/BR13"
F13_ZERO E13_E12 T_X12	"FCTL/ZERO,ECTL/APASS,DCTL/LDBT,AROM/AR12,BROM/BR13"

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F14_SLO(F14) E14_E13	"FCTL/BPASS,ECTL/APASS,DCTL/SLALU0,LDBF,AROM/AR13,BROM/BR14"
F14_ZERO E14_E12	"FCTL/ZERO,ECTL/APASS,DCTL/LDBF,AROM/AR12,BROM/BR14"
F14_ZERO E14_E12 T_X12	"FCTL/ZERO,ECTL/APASS,DCTL/LDBT,AROM/AR12,BROM/BR14"
FCCR_FCCR.OR.02	"FCTL/D.OR.A,ECTL/D.OR.A,DCTL/LDBF,CONST/OCT2,AROM/FCCR,BROM/FCCR"
FCC_00	"CONST/ZERO,MISC/FCC_TBUS"
FCC_00 FCCR_00	"FCTL/DPASS,ECTL/DPASS,DCTL/LDBF,CONST/ZERO,MISC/FCC_TBUS,BROM/FCCR"
FCC_04 FCCR_04	"FCTL/DPASS,ECTL/DPASS,DCTL/LDBF,CONST/OCT4,MISC/FCC_TBUS,BROM/FCCR"
FCC_04(FZ)	"CONST/OCT4,MISC/FCC_TBUS"
FCC_05(FZFC)	"CONST/OCT5,MISC/FCC_TBUS"
FCC_06(FZFU)	"CONST/OCT6,MISC/FCC_TBUS"
FCC_10 FCCR_10	"FCTL/DPASS,ECTL/DPASS,DCTL/LDBF,CONST/OCT10,MISC/FCC_TBUS,BROM/FCCR"
FCC_10(FN)	"CONST/OCT10,MISC/FCC_TBUS"
FCC_14 FCCR_14	"FCTL/DPASS,ECTL/DPASS,DCTL/LDBF,CONST/OCT14,MISC/FCC_TBUS,BROM/FCCR"
FCC_14(FNFZ)	"CONST/OCT14,MISC/FCC_TBUS"
FCC_FCCR	"FCTL/BPASS,ECTL/BPASS,CONST/BYTE10,MISC/FCC_TBUS,BROM/FCCR"
FDFL.BUFH_FPS X10_X10	"FCTL/BPASS,ECTL/BPASS,DCTL/LDBT,CONST/BYTE10,MISC/FDFL.BUFH_TBUS,AROM/FPS,AROM/BR10"
FDFL.BUF_FPS	"FCTL/BPASS,ECTL/BPASS,CONST/BYTE10,MISC/FDFL.BUF_TBUS,BROM/FPS"
FDFL.BUF_FPS F_E13	"FCTL/BPASS,ECTL/APASS,CONST/BYTE10,MISC/FDFL.BUF_TBUS,AROM/AR13,BROM/FPS"
FDFL_BUF	"MISC/FDFL_BUF,CONST/NOP"
FDFL_FDFLBAR	"CONST/FDFLBAR,MISC/FDFL_TBUS"
FDST(3)_X10	"FCTL/APASS,ECTL/APASS,DCTL/LDBF,BSEL/FDST,AROM/AR10,SECT/S10"
FEC_02	"FCTL/DPASS,ECTL/DPASS,DCTL/LDBF,CONST/OCT2,BROM/FEC"
FEC_04	"FCTL/DPASS,ECTL/DPASS,DCTL/LDBF,CONST/OCT4,BROM/FEC"
FEC_06	"FCTL/DPASS,ECTL/DPASS,DCTL/LDBF,CONST/OCT6,BROM/FEC"
FEC_10	"FCTL/DPASS,ECTL/DPASS,DCTL/LDBF,CONST/OCT10,BROM/FEC"
FEC_12	"FCTL/DPASS,ECTL/DPASS,DCTL/LDBF,CONST/OCT12,BROM/FEC"
FEC_14	"FCTL/DPASS,ECTL/DPASS,DCTL/LDBF,CONST/OCT14,BROM/FEC"
FPS_BUF	"FCTL/DPASS,ECTL/DPASS,DCTL/LDBF,MISC/TBUS_BUF,BROM/FPS,CONST/NOP"
FPS_BUF CC_BUF	"FCTL/DPASS,ECTL/DPASS,DCTL/LDBF,MISC/TBUS_BUF,BROM/FPS,MISC CTRL/LOADCC,CONST/NOP"
FPS_FPS.AND.147757	"FCTL/D.AND.A,ECTL/D.AND.A,DCTL/LDBF,CONST/OCT147757,AROM/FPS,BROM/FPS"
FPS_FPS.OR.100000	"FCTL/D.OR.A,ECTL/D.OR.A,DCTL/LDBF,CONST/OCT100000,AROM/FPS,BROM/FPS"
FSRC(32)_X11	"FCTL/APASS,ECTL/APASS,DCTL/LDBF,BSEL/FSRC,AROM/AR11,SECT/S14"
FSRC_X11	"FCTL/APASS,ECTL/APASS,DCTL/LDBF,BSEL/FSRC,AROM/AR11"
F_AC	"FCTL/BPASS,ECTL/BPASS,BSEL/AC"
F.AC.XOR.200	"FCTL/D.XOR.A,ECTL/D.XOR.A,ASEL/AC,CONST/OCT100000"
F_Q	"FCTL/QPASS,ECTL/QPASS"
F_X10	"FCTL/BPASS,ECTL/BPASS,BROM/BR10"
F_X10BAR	"FCTL/BBAR,ECTL/BBAR,BROM/BR10"
F_X12	"FCTL/BPASS,ECTL/BPASS,BROM/BR12"
F_X13	"FCTL/BPASS,ECTL/BPASS,BROM/BR13"
MAINT	ENAB MAINT/MAINT"
PC_PC+2	"DST SEL/ROM,RSPA/FC,ALU BLEG/A+2,TOUT/NOP"
PC_PC-2	"DST SEL/ROM,RSPA/FC,ALU BLEG/A-2,TOUT/NOP"
Q_(F12*EAC)	"FCTL/APASS,ECTL/BPASS,DCTL/LDQF,BSEL/AC,AROM/AR12"
Q_FDST	"FCTL/BPASS,ECTL/BPASS,DCTL/LDQF,BSEL/FDST"
Q_FSRC	"FCTL/BPASS,ECTL/BPASS,DCTL/LDQF,BSEL/FSRC"
Q_X12	"FCTL/BPASS,ECTL/BPASS,DCTL/LDQF,BROM/BR12"
Q_ZERO	"FCTL/ZERO,ECTL/ZERO,DCTL/LDQF"
R11_BX	"DST SEL/ROM,RSPA/R11,ALU BLEG/BX,TOUT/NOP"
R11_R11-2	"DST SEL/ROM,RSPA/R11,ALU BLEG/A-2,TOUT/NOP"
R12_R12+2	"DST SEL/ROM,RSPA/R12,ALU BLEG/A+2,TOUT/NOP"
R12_RD	"DST SEL/ROM,RSPA/R12,SRC SEL/RD,TOUT/NOP"
R12_RD+B	"DST SEL/ROM,RSPA/R12,SRC SEL/RD,ALU BLEG/A+B,TOUT/NOP"
R12_RD-2	"DST SEL/ROM,RSPA/R12,SRC SEL/RD,ALU BLEG/A-2,TOUT/NOP"
R12_RD-B	"DST SEL/ROM,RSPA/R12,SRC SEL/RD,ALU BLEG/A-B,TOUT/NOP"

TITLE	FPII-A FLOWS
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SHEET 6 OF 8	SIZE CODE	NUMBER	REV
	B FD	FPII-A 5	

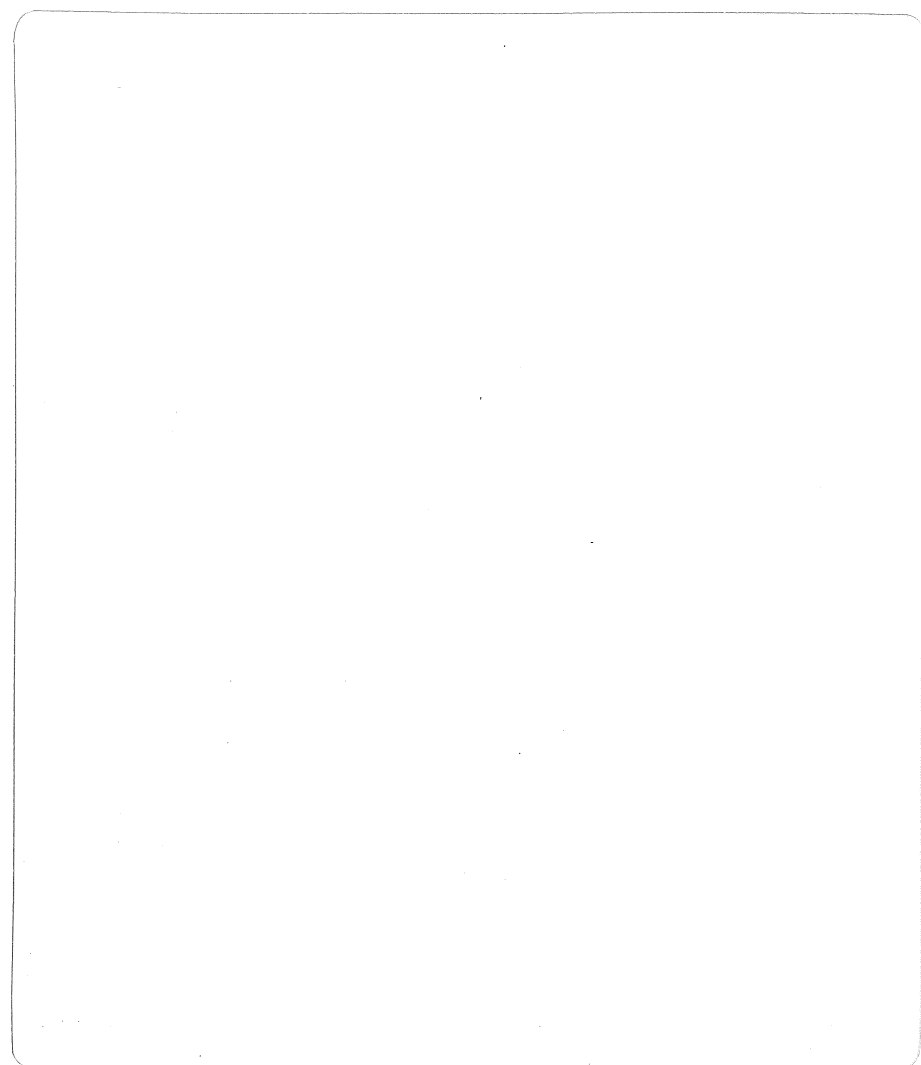
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R12_UDATA	"DST SEL/ROM,RSPA/R12,AMUX/UBUS,TOUT/NOP"
R14_(237,217)	"CONST/(143,159),DST SEL/ROM,RSPA/R14"
R14_(70,30)	"CONST/(56,24),DST SEL/ROM,RSPA/R14"
R14_(72,32)	"CONST/(58,26),DST SEL/ROM,RSPA/R14"
R14_4	"CONST/OCT4,DST SEL/ROM,RSPA/R14"
R14_B	"DST SEL/ROM,RSPA/R14,ALU BLEG/B,TOUT/NOP"
R14_BX	"DST SEL/ROM,RSPA/R14,ALU BLEG/BX,TOUT/NOP"
R14_R14 SWAB	"DST SEL/ROM,RSPA/R14,SSMUX/SWAB,TOUT/NOP"
R14_R14+1	"DST SEL/ROM,RSPA/R14,ALU BLEG/A+1,TOUT/NOP"
R14_R14+1 SWAB	"DST SEL/ROM,RSPA/R14,ALU BLEG/A+1,SSMUX/SWAB,TOUT/NOP"
R14_R14-1	"DST SEL/ROM,RSPA/R14,ALU BLEG/A-1,TOUT/NOP"
R14_X11 SWAB	"FCTL/BPASS,ECTL/BPASS,CONST/BYTE07,BROM/BR11,DST SEL/ROM,RSPA/R14,SSMUX/SWAB,CYCLE/LONG"
R14_X13 SWAB	"FCTL/BPASS,ECTL/BPASS,CONST/BYTE07,BROM/BR13,DST SEL/ROM,RSPA/R14,SSMUX/SWAB,CYCLE/LONG"
R14_X14 SWAB	"FCTL/BPASS,ECTL/BPASS,CONST/BYTE07,BROM/BR14,DST SEL/ROM,RSPA/R14,SSMUX/SWAB,CYCLE/LONG"
R17_(71,31)	"DST SEL/ROM,RSPA/R17,CONST/(57,25)"
R17_2	"CONST/OCT2,DST SEL/ROM,RSPA/R17"
R17_B	"DST SEL/ROM,RSPA/R17,ALU BLEG/B,TOUT/NOP"
R17_BBAR	"DST SEL/ROM,RSPA/R17,ALU BLEG/BBAR,TOUT/NOP"
R17_FEC	"FCTL/BPASS,ECTL/BPASS,CONST/BYTE10,BROM/FEC,DST SEL/ROM,RSPA/R17,CYCLE/LONG"
R17_FPS	"FCTL/BPASS,ECTL/BPASS,CONST/BYTE10,BROM/FPS,DST SEL/ROM,RSPA/R17,CYCLE/LONG"
R17_R17-B	"DST SEL/ROM,RSPA/R17,ALU BLEG/A-B,TOUT/NOP"
R17_X13 SWAB	"FCTL/BPASS,ECTL/BPASS,CONST/BYTE07,BROM/BR13,DST SEL/ROM,RSPA/R17,SSMUX/SWAB,CYCLE/LONG"
R17_ZERO	"DST SEL/ROM,RSPA/R17,ALU BLEG/ZERO,TOUT/NOP"
RD_R17	"DST SEL/RD,SRC SEL/ROM,RSPA/R17,TOUT/NOP"
RD_RD+2	"DST SEL/RD,SRC SEL/RD,ALU BLEG/A+2,TOUT/NOP"
RD_RD+B	"DST SEL/RD,SRC SEL/RD,ALU BLEG/A+B,TOUT/NOP"
RD_RD-2	"DST SEL/RD,SRC SEL/RD,ALU BLEG/A-2,TOUT/NOP"
RD_RD-B	"DST SEL/RD,SRC SEL/RD,ALU BLEG/A-B,TOUT/NOP"
RETURN	"RET/RETURN"
SERV(BR.OR.PFAIL)	"MISC/SERV.BR"
SET FD(FPS)	"FCTL/D.OR.A,ECTL/D.OR.A,DCTL/LDBF,CONST/OCT200,AROM/FPS,BROM/FPS"
SET FDFL	"CONST/ONES,MISC/FDFL,TBUS"
SET FL(FPS)	"FCTL/D.OR.A,ECTL/D.OR.A,DCTL/LDBF,CONST/OCT100,AROM/FPS,BROM/FPS"
SET FLAG	"MISC CTRL/COUNT"
SET SIGN	"FCTL/ZERO,ECTL/DPASS,DCTL/SLALU0,CONST/OCT1000000,BROM/BR10"
TBUS_BUF	"MISC/TBUS_BUF,CONST/NOP"
T_B	"ALU BLEG/B,TOUT/NOP"
T_R14	"RSPA/R14,TOUT/NOP"
T_R14-B	"RSPA/R14,ALU BLEG/A-B,TOUT/NOP"
T_R17+B	"RSPA/R17,ALU BLEG/A+B,TOUT/NOP"
UDATA_BX	"ALU BLEG/BX,TOUT/NOP"
UDATA_R17	"SRC SEL/ROM,RSPA/R17,TOUT/NOP"
UDATA_X10(3)	"FCTL/BPASS,ECTL/BPASS,CONST/BYTE76,BROM/BR10"
UDATA_X11(0)	"FCTL/BPASS,ECTL/BPASS,CONST/BYTE10,BROM/BR11"
UDATA_X11(1)	"FCTL/BPASS,ECTL/BPASS,CONST/BYTE32,BROM/BR11"
UDATA_X11(2)	"FCTL/BPASS,ECTL/BPASS,CONST/BYTE54,BROM/BR11"
UDATA_X11(3)	"FCTL/BPASS,ECTL/BPASS,CONST/BYTE76,BROM/BR11"
X10(0)_BUF	"FCTL/DPASS,ECTL/DPASS,DCTL/LDBF,MISC/TBUS_BUF,BROM/BR10,SECT/S1,CONST/NOP"
X10(1)_BUF	"FCTL/DPASS,ECTL/DPASS,DCTL/LDBF,MISC/TBUS_BUF,BROM/BR10,SECT/S2,CONST/NOP"
X10(10)_ZERO	"FCTL/ZERO,ECTL/ZERO,DCTL/LDBF,BROM/BR10,SECT/S3"
X10(2)_BUF	"FCTL/DPASS,ECTL/DPASS,DCTL/LDBF,MISC/TBUS_BUF,BROM/BR10,SECT/S4,CONST/NOP"
X10(210)_ZERO	"FCTL/ZERO,ECTL/ZERO,DCTL/LDBF,BROM/BR10,SECT/S7"
X10(3)_BUF	"FCTL/DPASS,ECTL/DPASS,DCTL/LDBF,MISC/TBUS_BUF,BROM/BR10,SECT/S10,CONST/NOP"
X10_Q	"FCTL/QPASS,ECTL/QPASS,DCTL/LDBF,BROM/BR10"
X10_ROT(ZERO*(EAC.XOR.E10)	"FCTL/ZERO,ECTL/A.XOR.B,DCTL/ROT,ASEL/AC,BROM/BR10"

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X10_ROT R(X12)	"FCTL/APASS,ECTL/APASS,DCTL/ROT R,AROM/AR12,BROM/BR10"
X10_X11	"FCTL/APASS,ECTL/APASS,DCTL/LDBF,AROM/AR11,BROM/BR10"
X11(10)_ZERO	"FCTL/ZERO,ECTL/ZERO,DCTL/LDBF,BROM/BR11,SECT/S3"
X11_(70,30)-X14	"FCTL/D-A-1,ECTL/D-A-1,DCTL/LDBF,ECIN/ONE,CONST/(56.24)*,AROM/AR14,BROM/BR11,CYCLE/LONG"
X11_AC	"FCTL/APASS,ECTL/APASS,DCTL/LDBF,ASEL/AC,BROM/BR11"
X11_ROT L(X11)	"FCTL/BPASS,ECTL/BPASS,DCTL/ROT L,BROM/BR11"
X11_ROT R(X12)	"FCTL/APASS,ECTL/APASS,DCTL/ROT R,AROM/AR12,BROM/BR11"
X11_SL0(X11-X12) Q_SLC63(Q)	"FCTL/B-A-1,ECTL/B-A-1,DCTL/SLALUOQ,ECIN/ONE,AROM/AR12,BROM/BR11"
X11_SL0(X12+X11) Q_SLC63(Q)	"FCTL/A+B,ECTL/A+B,DCTL/SLALUOQ,AROM/AR12,BROM/BR11"
X11_SR0(X11)	"FCTL/BPASS,ECTL/BPASS,DCTL/SROALU,BROM/BR11"
X11_SR1(X11)	"FCTL/BPASS,ECTL/BPASS,DCTL/SR1ALU,BROM/BR11"
X11_X12	"FCTL/APASS,ECTL/APASS,DCTL/LDBF,AROM/AR12,BROM/BR11"
X11_ZERO	"FCTL/ZERO,ECTL/ZERO,DCTL/LDBF,BROM/BR11"
X12(1)_BUF	"FCTL/DPASS,ECTL/DPASS,DCTL/LDBF,MISC/TBUS_BUF,BROM/BR12,SECT/S2,CONST/NOP"
X12(2)_BUF	"FCTL/DPASS,ECTL/DPASS,DCTL/LDBF,MISC/TBUS_BUF,BROM/BR12,SECT/S4,CONST/NOP"
X12_-X12	"FCTL/-B-1,ECTL/-B-1,ECIN/ONE,DCTL/LDBF,BROM/BR12,CYCLE/LONG"
X12_ROT L(X10)	"FCTL/APASS,ECTL/APASS,DCTL/ROT L,AROM/AR10,BROM/BR12"
X12_ROT L(X11)	"FCTL/APASS,ECTL/APASS,DCTL/ROT L,AROM/AR11,BROM/BR12"
X12_ROT R(F10.OR.F12)*E12)	"FCTL/A.OR.B,ECTL/BPASS,DCTL/ROT R,AROM/AR10,BROM/BR12"
X12_SL0(Q)	"FCTL/QPASS,ECTL/QPASS,DCTL/SLALUO,BROM/BR12"
X12_SL0(X12)	"FCTL/BPASS,ECTL/BPASS,DCTL/SLALUO,BROM/BR12"
X12_SL00(X12)	"FCTL/A+B,ECTL/A+B,DCTL/SLALUO,AROM/AR12,BROM/BR12,CYCLE/LONG"
X12_SR0(X11+X12) Q_SR0(Q)	"FCTL/A+B,ECTL/A+B,DCTL/SROALUQ,AROM/AR11,BROM/BR12"
X12_SR0(X11BAR.AND.X12)	"FCTL/ABAR.AND.B,ECTL/ABAR.AND.B,DCTL/SROALU,AROM/AR11,BROM/BR12"
X12_SR0(X12)	"FCTL/BPASS,ECTL/BPASS,DCTL/SROALU,BROM/BR12"
X12_SR0(X12) Q_SR0(Q)	"FCTL/BPASS,ECTL/BPASS,DCTL/SROALUQ,BROM/BR12"
X12_X10	"FCTL/APASS,ECTL/APASS,DCTL/LDBF,AROM/AR10,BROM/BR12"
X12_X11-X12	"FCTL/A-B-1,ECTL/A-B-1,DCTL/LDBF,ECIN/ONE,AROM/AR11,BROM/BR12,CYCLE/LONG"
X12_X12+X11	"FCTL/A+B,ECTL/A+B,DCTL/LDBF,AROM/AR11,BROM/BR12,CYCLE/LONG"
X12_X12+X14	"FCTL/A+B,ECTL/A+B,DCTL/LDBF,AROM/AR14,BROM/BR12,CYCLE/LONG"
X12_X12-X11	"FCTL/B-A-1,ECTL/B-A-1,DCTL/LDBF,ECIN/ONE,AROM/AR11,BROM/BR12,CYCLE/LONG"
X12_ZERO	"FCTL/ZERO,ECTL/ZERO,DCTL/LDBF,BROM/BR12"
X13_(37,17)-X13	"FCTL/D-A-1,ECTL/D-A-1,DCTL/LDBF,ECIN/ONE,CONST/(31.15),AROM/AR13,BROM/BR13,CYCLE/LONG"
X13_R14	"FCTL/DPASS,ECTL/DPASS,DCTL/LDBF,MISC/TBUS_1134,BROM/BR13,RSPA/R14,CYCLE/LONG,TOUT/NOP,CONST/NOP"
X13_X13+1	"FCTL/BPLUS,ECTL/BPLUS,DCTL/LDBF,ECIN/ONE,BROM/BR13"
X13_X13+200	"FCTL/D+A,ECTL/D+A,DCTL/LDBF,CONST/OCT100000,AROM/AR13,BROM/BR13,CYCLE/LONG"
X13_X13+X14	"FCTL/A+B,ECTL/A+B,DCTL/LDBF,AROM/AR14,BROM/BR13"
X13_X13-1	"FCTL/B-1,ECTL/B-1,DCTL/LDBF,BROM/BR13"
X13_X13-200	"FCTL/A-D-1,ECTL/A-D-1,DCTL/LDBF,ECIN/ONE,CONST/OCT100000,AROM/AR13,BROM/BR13,CYCLE/LONG"
X13_X13-X14	"FCTL/B-A-1,ECTL/B-A-1,ECIN/ONE,DCTL/LDBF,AROM/AR14,BROM/BR13"
X13_X14	"FCTL/APASS,ECTL/APASS,DCTL/LDBF,AROM/AR14,BROM/BR13"
X14(1)_40000	"FCTL/DPASS,ECTL/DPASS,DCTL/LDBF,CONST/OCT40000,BROM/BR14,SECT/S2"
X14(3)_40000	"FCTL/DPASS,ECTL/DPASS,DCTL/LDBF,CONST/OCT40000,BROM/BR14,SECT/S10"
X14_R14	"FCTL/DPASS,ECTL/DPASS,DCTL/LDBF,MISC/TBUS_1134,BROM/BR14,RSPA/R14,CYCLE/LONG,TOUT/NOP,CONST/NOP"
X14_ROT R(F10.OR.F14)*E14)	"FCTL/A.OR.B,ECTL/BPASS,DCTL/ROT R,AROM/AR10,BROM/BR14"
X14_X11.AND.X14	"FCTL/A.AND.B,ECTL/A.AND.B,DCTL/LDBF,AROM/AR11,BROM/BR14"
X14_X12	"FCTL/APASS,ECTL/APASS,DCTL/LDBF,AROM/AR12,BROM/BR14"
X14_X13.XOR.200	"FCTL/D.XOR.A,ECTL/D.XOR.A,DCTL/LDBF,CONST/OCT100000,AROM/AR13,BROM/BR14"
X14_ZERO	"FCTL/ZERO,ECTL/ZERO,DCTL/LDBF,BROM/BR14"

TITLE	SIZE	CODE	NUMBER	REV
FPII-A FLOWS	SHEET 8 OF 8	B FD	FPII-A-5	



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